The Golden Hands Encyclopedia of

# CRAFTS

The complete guide to traditional and modern home crafts

### Volume 16

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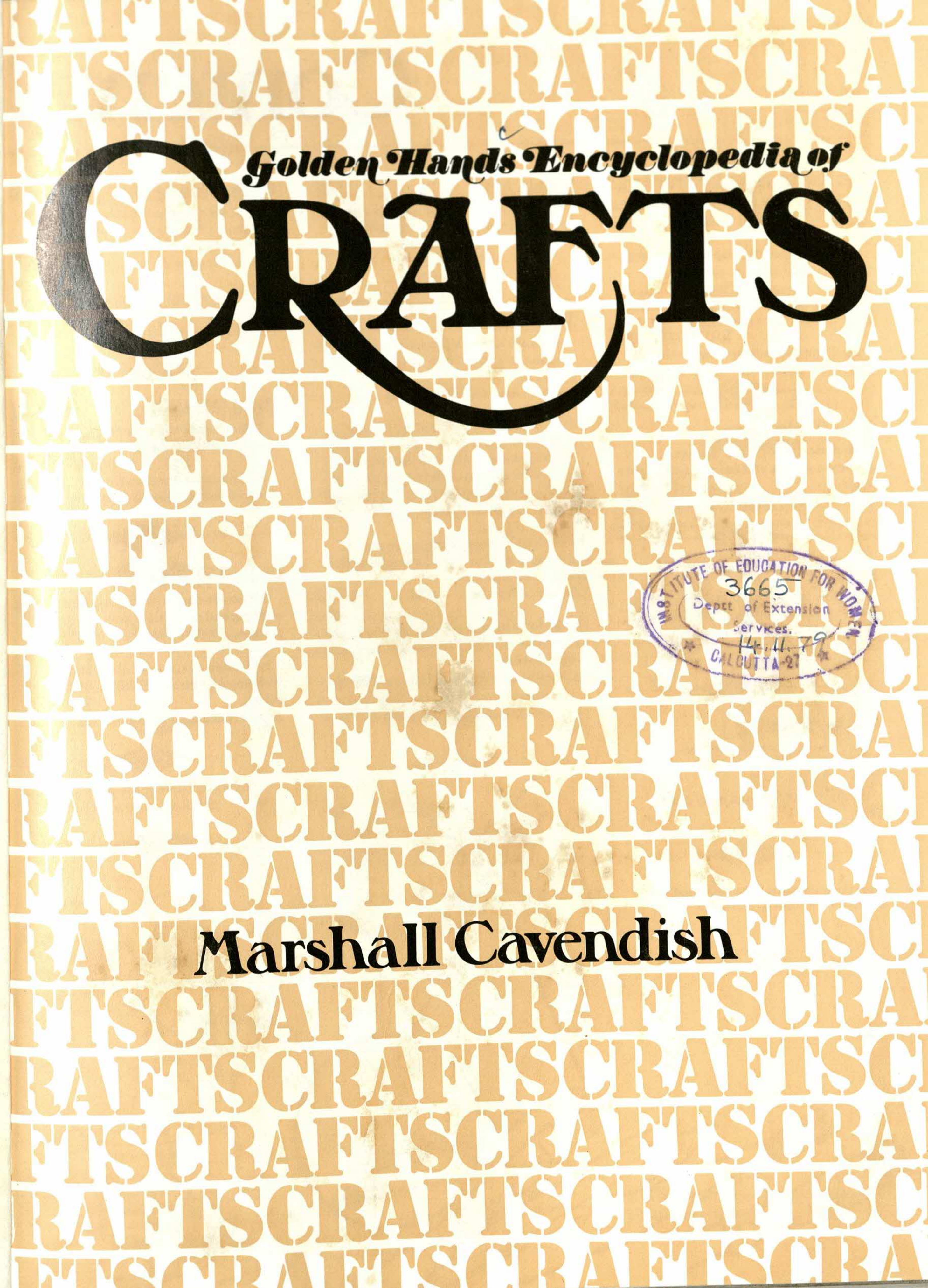

# Golden Hands Encyclopedia of

# CRAFTS

INSTITUTE OF EDUCATION FOR WOMEN
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## Marshall Cavendish

# Contents

## Creative Ideas

**60**/Hot pot stand. An unusual design in chipboard and nails. **1681**

**61**/Hen-shaped egg-cup and matching napkin. Pretty motif to paint. **1709**

**62**/Hair-net flower holder. Hazelnuts and a hairnet for a novel idea. **1737**

* **63**/Wooden candelabrum. **1765**

## Yarn/Embroidery

**13**/Reticella with lacy fillings. Intricate stiches and designs for delicate effect.
*Author: Marjorie Hastie Smith.* **1682**

## Plastics

* **23**/How to bend acrylic sheet. Clear, simple patterns for book stand and egg rack.
*Author: Norman Fisher.* **1684**

## Colour/Painting

**22**/Paint and needle pictures.
*Author: Mary Franks.* **1688**

**23**/The fun of face and body paint. **1728**

Front Cover Photograph: Ken Kirkwood
Back Cover Photograph: Peter Dorp

## Edible Arts

**9**/Croissants to shape and bake. Step-by-step recipe for a delicious breakfast.
*Recipes: Mary Pope.* **1692**

## Paper

**42**/More surfaces for découpage. Making and covering a screen; other surfaces.
*Author: Alan Wheeler.* **1694**

* **43**/Bookbinding – making the case.
*Author: Brian Hoy.* **1714**
*See also Design know-how chapters 48, page 1344; 51, page 1428; 52, page 1454; 53, page 1484; 54, page 1512; 55, page 1540; 56, page 1567 and 57, page 1596.*

**44**/Bookbinding: section sewing. Making a section frame; a single-section booklet to make.
*Author: Brian Hoy.* **1738**

* **45**/How to make paper by hand. Vegetable and fabric fibres for individuality.
*Author: Joyce Carr-Griffiths.* **1766**

## Cloth/Sewing

**21**/Waistcoats in three lengths. Graph patterns; Chanel style and quilted waistcoats.
*Author: Eleanor Harvey.* **1718**

**22**/Re-covering umbrellas. Unlined, lined and frilled designs.
*Author: Eleanor Harvey.* **1718**

## Wood/Modelling

**7**/Sculpture from natural wood.
*Author: John Matthews.* **1702**

**8**/Laminated wood sculpture.
*Author: Sue Burgin.* **1750**

## Cloth/Upholstery

**8**/Fireside chairs: stripping. Renovating, padding and painting a junk-shop chair.
*Author: Lindsay Vernon.* **1706**

**9**/Fireside chairs: upholstering. Webbing and lining; cushions and covers.
*Author: Lindsay Vernon.* **1732**

## Design Know-how

61/Ergonomics: proportions for tables. 1708

62/Drawing in perspective. 1736

63/More about perspective. 1764

64/The circle in perspective. 1792

◆

## Leather

* 4/Starting to work with thick leather. Plain and braided belts for jeans. *Author: David Boot.* 1710

* 5/Thonging thick leather. Pattern for a shoulder bag. *Author: David Boot.* 1770

◆

## Wax

5/Candles from bought moulds. Flexible and rigid moulds; varied ways of using wax. *Author: Marilyn Berry.* 1722

◆

## Wood/Finishes

5/French polishing wood surfaces. Technique for a lustrous finish. 1726

◆

## Clay

**38**/Making a stewpot. *Author: Emmanuel Cooper.* 1742

◆

## Cloth/Appliqué

**5**/San Blas appliqué. Colourful South American motifs; a bird pattern to trace. *Author: Eleanor Harvey.* 1746

◆

## Colour/Printing

**19**/Screen printing without stencils. Preparing the screen, materials for printing on paper and fabric. *Author: Jill Barber.* 1754

◆

## Metal

* **22**/Etching on copper. Tools and materials, step-by-step transfer of design and etching. 1758

* **23**/Tin casting using bought moulds. A set of model soldiers, cast and painted. *See also Plastics chapter 18, page 1444.* 1774

◆

## Yarn/Needlepoint

**8**/Smooth-faced needlepoint rugs. Choice of backing, type of needle and yarn; the frame and basic stitches. 1760

**9**/Rugs with a pile surface. Variety of stitches; a pattern for a Kazak rug. *Author: Frances Brown.* 1776

◆

## Egg Decorating

* **2**/Cutting and ornamenting eggs. Glamorous gifts to make, using sequins, beads and ribbon. *Author: Stacey Carr.* 1780

◆

## Yarn/Weaving

**21**/Fabric weaving on a roller loom. Using the roller loom, working the warp. Pattern for a plaid scarf. *Author: Victor Edwards.* 1784

◆

## Home Herbalist

* **4**/Sweet smells of incense. *Author: Frances Hutchinson.* 1790

◆

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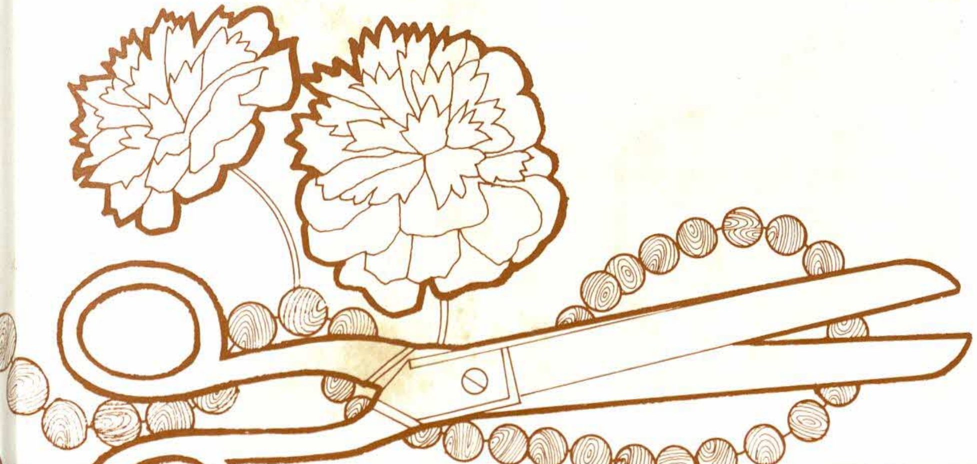

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# Suppliers addresses
## United Kingdom

Please send a s.a.e.
with any queries to
the suppliers below

**Creative Ideas 61.** Materials at haberdashery departments and art supply shops.

**Leather 4.** Tools and hides at J. T. Batchelor & Co, 146 Fleet Rd, Hampstead, London NW3 2RH and John P. Milner Ltd, 67. Queen St, Hitchin, Herts SG4 9TU (both offer mail order service). Denim boilersuit and scarf at Dickens & Jones, Regent St, London W1.

**Plastics 23.** Acrylic at R. Denny & Co Ltd, 13 Netherwood Rd, London W14 who also supply mail order service and Marchmade Ltd, 79 Dean St, London W1 (Personal shoppers only).

**Paint 22.** Water colours and drawing inks at Reeves & Sons Ltd, 249 Lincoln Rd, Enfield, Middlesex, (mail order only) and 178 Kensington High St, London W8 for personal shoppers.

**Paint 23.** Theatrical make-up and materials for facial alterations (such as nose putty and false hair) at Charles H. Fox, 25 Shelton St, London WC2 who also offer mail order service.

**Edible Arts 9.** Cup and saucer at David Mellor, 4 Sloane Sq, London SW1.

**Paper 42.** Découpage products at Leisure Crafts Centre, 2 Jerden Place, London SW6 5PT who offer home and overseas mail order, and other specialist craft shops.

**Paper 43.** Bookbinding tools and materials at J. Hewit & Sons, 97 St John St, London EC1; Russell Bookcrafts, Bancroft, Hitchin, Herts and Dryad Ltd, PO Box 38, Northgates, Leicester LE1 9BU (all offer mail order service and catalogue).

**Paper 44.** Bookbinding tools and materials at J. Hewit & Sons, 97 St John St, London EC1; Dryad Ltd, PO Box 38, Northgates, Leicester, LE1 9BU (both offer mail order service and catalogue). Fabric covered folder and fabric at Liberty & Co Ltd, Regent St, London W1.

**Paper 45.** Moulds and deckles for hand-made paper at Edwin Amies & Son Ltd, Hayle Mill, Tovil, Maidstone, Kent (the equipment is made to order to traditional specifications). Cold water storage tanks for use as vats can be obtained from builder's merchants.

**Sewing 21.** Skirt and blouse at Dickens & Jones, Regent St, London W1.

**Sewing 22.** Fabrics by Tootal (not waterproofed) PO Box 119, Manchester M60 1NT. Raincoat at main branches of Wallis shops.

**Modelling 8.** Materials at timber yards and DIY stores.

**Upholstery 8.** Foam and all other materials at Grant Baxell, 195A Upper Richmond Rd, London SW15 who also offer mail order service. Giraffe at Harrods, Knightsbridge, London SW1.

**Leather 5.** Cow hide and tools at J T Batchelor & Co, 146 Fleet Rd, Hampstead, London NW3 2RH who also offer mail order, and Barrow Hepburn Leatherstore, 205 Kensington High St, London W8 (also mail order and tuition). Jumpsuit by Stephen Marks. Scarf at Dickens & Jones, Regent St, London W1. Bangles at Top Shop, Oxford Circus, London W1. Bed cover by Dorma available at department stores.

**Wax 5.** Materials at Candle Makers Supplies, 28 Blythe Rd, London W14 who also offer mail order service and catalogue.

**Finishes 5.** Table from Hampstead Antique Emporium, 12 Heath St, London NW3 (for personal shoppers only).

**Clay 38.** Materials at The Fulham Pottery Ltd, 210 New King's Road, London SW6 4NY, or at Southern Supplies Centre, 42 Morley Rd, Tonbridge, Kent; Harrison Mayer Ltd, Meir, Stoke-on-Trent ST3 7PX; Ferro (Great Britain) Ltd, Wombourne, Wolverhampton WV5 8DA who also supply overseas; Wengers Ltd, Garner St, Etruria, Stoke-on-Trent, Staffs ST4 7BQ.

**Printing 19.** Dylon and fast-acting cold water dyes such as Procion M (and additional chemical agents such as thickening agents) at Hobby Horse, 15 Langton St, London SW10 and Candle Makers Supplies, London W14, except Dylon (both offer mail order service). Director's chair (without butterfly motif) at Heals, 196 Tottenham Court Rd, London W1.

**Metal 22.** Materials at Bycra Ltd, Sandlebeck Way, Wetherby, and general craft stores.

**Metal 23.** Casting kits at craft shops.

**Needlepoint 8.** Yarns and canvas at Jackson's Rugcraft Centre, Craft Mill, Albert St, Hebden Bridge, Yorks who also offer mail order service.

**Needlepoint 9.** Yarns and canvas at Jackson's Rugcraft Centre, Craft Mill, Albert St, Hebden Bridge, Yorks who also offer mail order service. Jardinière and plant at Casa Pupo, 17 Sloane St, London SW1 9NE. Bird cage at Conran, 77 Fulham Rd, London SW7.

**Egg decoration 2.** Multi-purpose tool at A Gallenkamp, PO Box 290, Technico House, Christopher St, London EC2. Jeweller's pendant drill at E Gray & Sons, Grayson House, 12 Clerkenwell Road, London EC1M 5PL who also offer mail order service.

**Weaving 21.** Looms at Dryad Ltd, PO Box 38, Northgates, Leicester LE1 9BU (mail order only) and Reeves Dryad Shop, 178 Kensington High St, London W8 (personal shoppers only) and The Handweavers Studio and Gallery Ltd, 29 Haroldstone Rd, Walthamstow, London E17 7AN who also offer mail order service. Weaving accessories and warping equipment also at Harris Looms, Northgrove Rd, Hawkhurst, Kent TH8 4HP who offer mail order service. Hat and jacket at Top Shop (see under Leather). Sweater at Harrods, Knightsbridge, London SW1.

**Home herbalist 4.** Incense treated charcoal and Thuribles at A R Mowbray, 28 Margaret St, London W1 who also offer mail order service.

**Metrication**
In this volume you will find two systems of measurement. The first set of figures refers to the metric system and the Imperial figures follow in brackets. Wherever possible, a commonsense approach has been adopted and both sets of measurements have been worked out in round numbers. **BUT BEWARE!** This means that metric and the Imperial figures are *not* equivalent so make sure you only work with one or other set of figures.

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An unusual and colourful pot stand for a table.

# Creative ideas 60

## Hot pot stand

How often have you served an appetizing hot pot or casserole in the kitchen, rather than risk scorch marks on the dining-room table? By using this stand to protect your table you can now serve your *'piéce de résistance'* in front of your guests.

**You will need:**

Pair of compasses.
12mm (½") chipboard measuring 37cm x 25cm (15"x 10").
29 x No.8 rust-proof screws 4cm (1½") long—with countersunk heads.
Gloss undercoat and topcoat.
Fret saw, drill with 2mm ($\frac{1}{16}$") drill bit, screwdriver.
Coarse and fine glasspaper.

Following fig.1, draw two overlapping circles on the chipboard—both 12cm (5") in radius. Draw the second circle from a point on the circumference of the first. Then, taking one circle as the base of the stand, draw the shape of the handle on one side, as shown. Alternatively, with a piece of paper folded in half draw and cut out one side of the handle against the fold. Open out paper for full handle shape. Position and draw round on chipboard.

Cut out the whole shape with the fret saw.

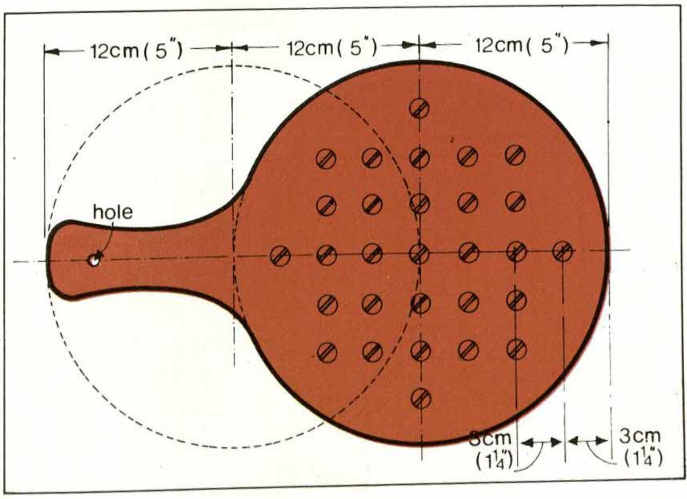
Drill a hole through the handle, as indicated, in order to hang the stand when not in use.

Now sand round the edges of the entire object, first with the coarse glasspaper and then with the fine piece for a smooth finish.

Prepare the stand with a gloss undercoat and then two or three coats of gloss paint. Lightly sand the surfaces between each coat with fine glasspaper.

Finally, at 3cm (1¼") intervals mark out and drill the screw holes in positions as indicated—making sure not to penetrate right through the actual stand.

Insert screws firmly and so they are equal in height. Once you have found the correct depth to screw in one screw, you could use a ruler or other stiff object, placed along the full line of screw marks, to give an accurate guide to the height of the remaining screws.



1. *Follow these measurements for marking out the stand.*

Neil Lorimer

# Reticella with lacy fillings

**Yarn — embroidery 13**

Reticella embroidery is a form of cut work which uses some of the techniques of drawn thread work. The designs for this type of work are made by open squares based on the weave of the fabric.

The designs are easy to plan. The squares may form a motif, such as the butterfly in the photograph, or they may form a geometric pattern. The squares can be completely cut out or four threads of the fabric can be left across the middle as a basis on which to work the filling.

Lacy fillings within the squares are usually based on a geometric design with the addition of arcs and picots which create the lacy effect. The centres of the squares are often decorated with a woven spider's web filling (see Embroidery chapter 11, page 1630) or a back-stitched spider's web as shown in fig.6.

Surface embroidery may be added to suggest features or to balance the design.

## Materials

Choose a firm, evenweave fabric—like linen—with threads which are easy to count and to withdraw. The embroidery thread should match in fibre and weight.

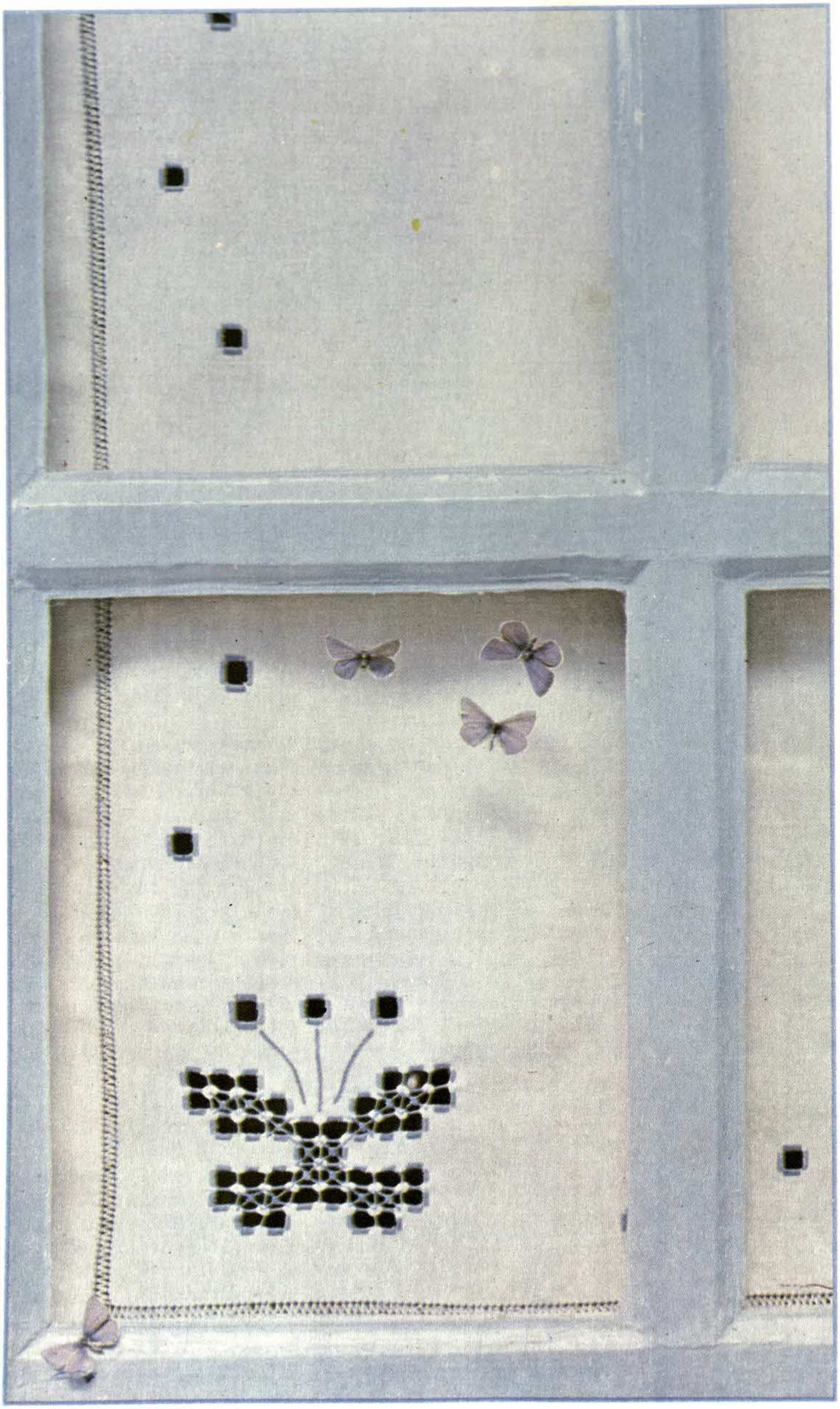
## Preparing the squares

☐ Plan your design to true size on paper and accurately mark the positions of the squares lightly in pencil. If you are leaving threads across the middle of the squares, mark these.

☐ Outline the squares with one or two rows of running stitch. Cut the threads to be removed in the square, leaving a margin of two or three threads inside the marked lines. Draw out the cut threads as shown in fig.1.

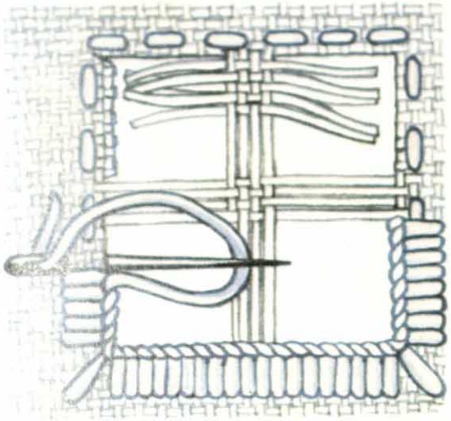
☐ Clip the corners of the square to the running stitch and turn the cut edges to the wrong side. Strengthen them by overcasting (see box) or, on heavy fabrics, by buttonholing (see Embroidery chapter 12). Work the strengthening stitches closely and neatly, using the weave of the fabric as a size guide—a height of three or four threads, depending on the fabric, is a good average size. The stitches should cover the running stitch (fig.1).

☐ Between squares, where you have left the minimum number of four threads, work the strengthening stitching over all of them as shown in the photograph. Overcasting gives a better effect than buttonhole stitch here.

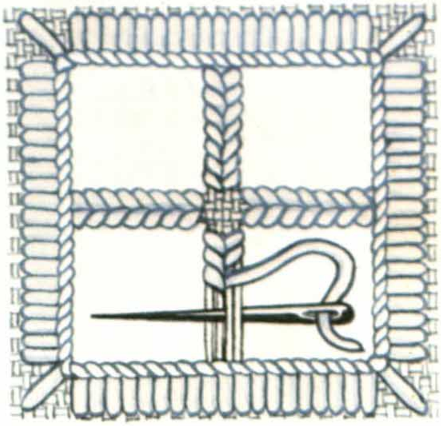


*An unusual blind with a butterfly motif built up from the small open squares which are characteristic of Reticella embroidery. The antennae are worked in stem stitch and the edging is a drawn thread twisted border.*

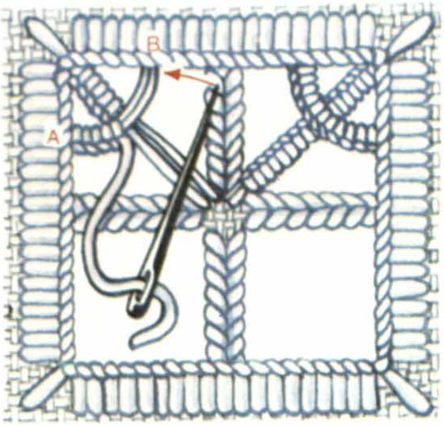
Maison de Marie Claire/Kalvar



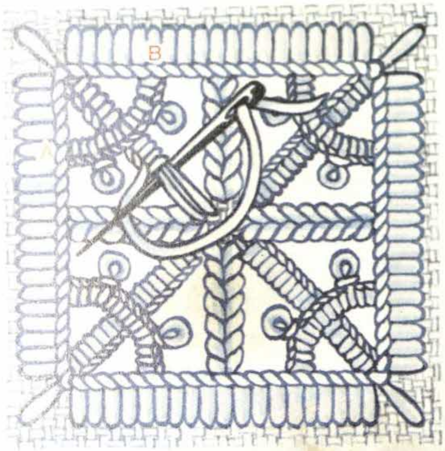
1. *Drawing threads and buttonholing.*



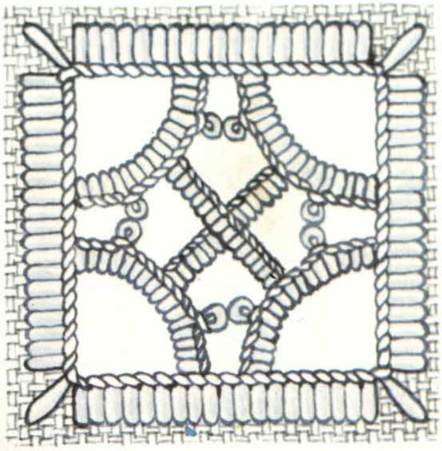
2. *Threads strengthened by weaving.*



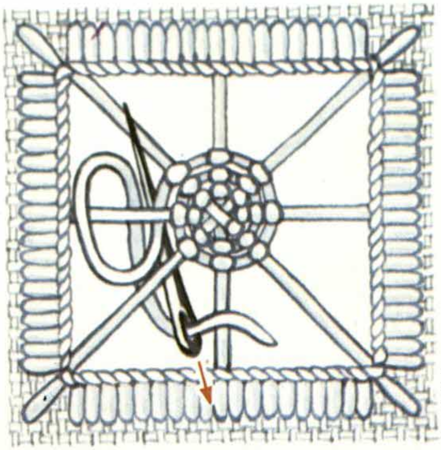
3. *Forming an arc.*



4. *Completing the diagonal.*



5. *Filling an open square.*



6. *A back-stitched spider's web.*

Coral Mula

## Filling the squares

The best way of ensuring that you work the filling stitches at an even tension is to tack the fabric over a piece of firm paper—the paper on which you draw your design is ideal as it will show the positions of arcs, etc.

To apply the paper, lay the fabric flat with the right side facing up and place the paper under it. If you are using the design paper, check that the squares are correctly placed. Tack the paper to the fabric round the edge. The stitches are worked on top of the paper and should not penetrate it. Do not remove the paper until the fillings are complete.

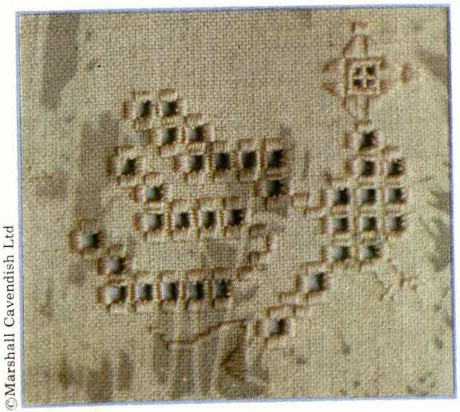
**Strengthening the threads.** If you have left threads across the centre of the squares, strengthen them by weaving over and under as shown in fig.2.

**To work diagonal lines** to the corners of the square, take a long stitch from the centre to the corner and back again to the centre. Work the other diagonals in the same way and fasten off at the back of the centre.

☐ Join the thread at the corner and work overcasting or buttonholing over the long diagonal stitches.

**Arcs.** When you reach the position of an arc on the diagonal line, take a loose stitch from the diagonal to the edge of the square (fig.3, point A), back in a curved line, passing over the diagonal, to a corresponding point on the adjacent side of the square (point B).

☐ Make another curving line to point A and then work over the arc in buttonhole stitch or overcasting as far as the diagonal. Make another curving stitch to point B and work over the arc from point B to the diagonal. Complete working along the diagonal towards the centre of the square (fig.4), adding more arcs in the same way if desired. Notice how the arcs can be embellished with picots (see Embroidery chapter 12, page 1662).



©Marshall Cavendish Ltd

*Simple geometric pattern.*

**Filling open squares.** These can be filled in a similar way with diagonal lines which are taken across the square, or you could simply work groups of arcs across the corners and link them in the centre by small diagonals (fig.5).

**Back-stitched spider's web.** Work an even number of long stitches across the square—diagonally from corner to corner for an open effect and, for a fuller effect, also from the centre of one side to the centre of the opposite side in both directions.

☐ Knot the thread neatly to the centre of the web and, working from right to left as you progress round the spokes of the web, work a back stitch over each spoke. Pass the needle under the next spoke before working the back stitch over it (fig.6). (It is easier to work with the needle as shown.) The best effect is made by leaving some of the web unworked so that the spokes show, as in the butterfly motif.

To finish off, darn in the thread securely on the back of the web.

**Overcasting**

When used as an embroidery stitch, overcasting is worked like a very small, firm satin stitch (see Embroidery chapter 5, page 768).

# How to bend acrylic sheet

Acrylic is a thermoplastic. This means that it becomes pliable when heated and can be bent and moulded to create a variety of different objects. Two kinds of bend can be made using sheet acrylic: an angular bend along a straight line, and a curve. The straight or angular bend, which is the simpler of the two types, is discussed in this chapter.

**Angular bend.** The basic technique for the angular bend is to heat an acrylic sheet along the line where the bend will be. When the acrylic becomes pliable, the sheet is bent along the heated line, then cooled and hardened in a dish of water or under a running tap. The tool used for heating is called a strip heater.

## Strip heater

Basically a strip heater is a bar mounted on a support, with pieces of wood on either side on which to rest the acrylic during heating—the bar does not actually touch the acrylic (fig.1).

**You will need:**

Steel bar 1.9cm (¾") diameter, 30cm (12") long.
Hand or electric drill with 3mm (⅛") bit.
13mm (½") plywood 10cm x 30cm (5"x 12").
Aluminium channel (U-shape in section), 1.25cm (½") wide, 2.5cm (1") high, 30cm (12") long.
Ten 2.5cm (1") nails.
Set square.
Three No.4 screws 9mm (⅜") long.
Two pieces of wood 50mm x 25mm (2"x 1"), 30cm (12") long.
Pencil, hammer, screwdriver.

☐ First attach the aluminium channel to the plywood to make a support for the bar. Drill three holes evenly spaced along the aluminium channel, and drill three corresponding holes along the centre of the plywood base to accommodate the screws.

☐ Position the aluminium channel on the plywood and screw in place.

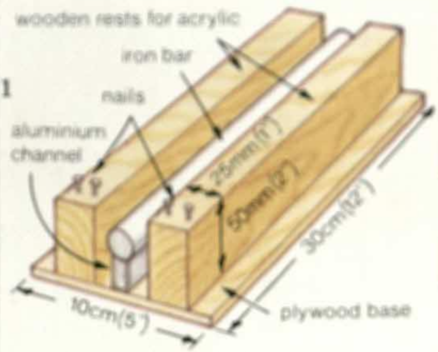
☐ To make the rests for the acrylic sheet while it is being heated, nail the two pieces of wood either side of the aluminium support, 1.25cm (½") away from it.

When a piece of acrylic is placed on the rests there should be a gap of 6mm (¼") between the bar and the underside of the acrylic sheet to prevent the acrylic touching the bar during heating.

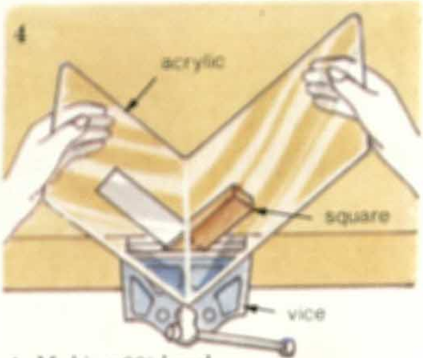
☐ Using a set square draw a line across the top of the two wooden rests at one end and at right angles to the steel bar.

☐ Half sink four nails along this line (fig.2).

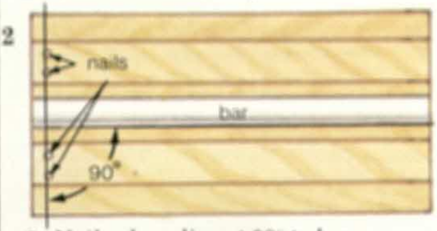
*The egg rack and recipe book stand are easily made from acrylic sheet and will be an asset in any kitchen. Designs by Norman Fisher.*



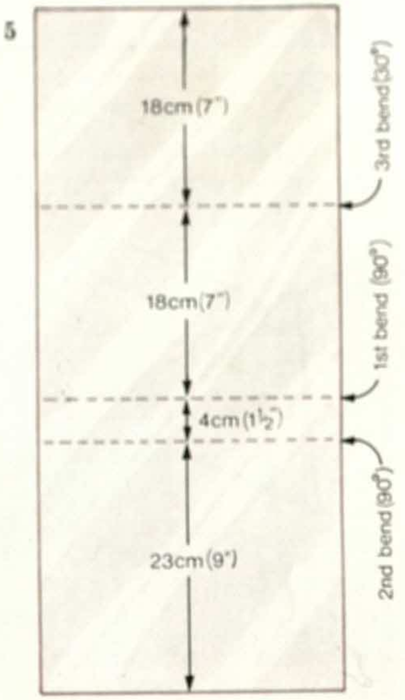
1. *Construction of strip heater.*

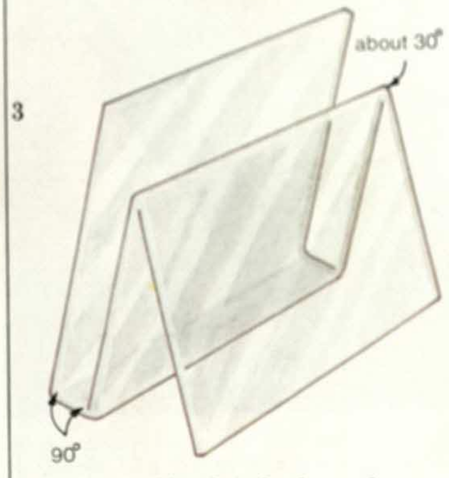


4. *Making 90° bend.*



2. *Nails along line at 90° to bar.*





3. *Angles of bends in book stand.*

5. *Position and order of bends.*

Paul Williams

If the acrylic sheet is butted up against these nails during heating, this will ensure that the bend will be at right angles to the edge of the acrylic.

## Recipe book stand

This book stand will protect your recipe books from grease and food marks, and will make a recipe easier to follow while you are cooking. It is made by cutting a rectangle of acrylic sheet and making three bends across the width of the rectangle—two of 90° and one of 30° (fig.3). The stand is 23.5cm (9¼") high.

**You will need:**

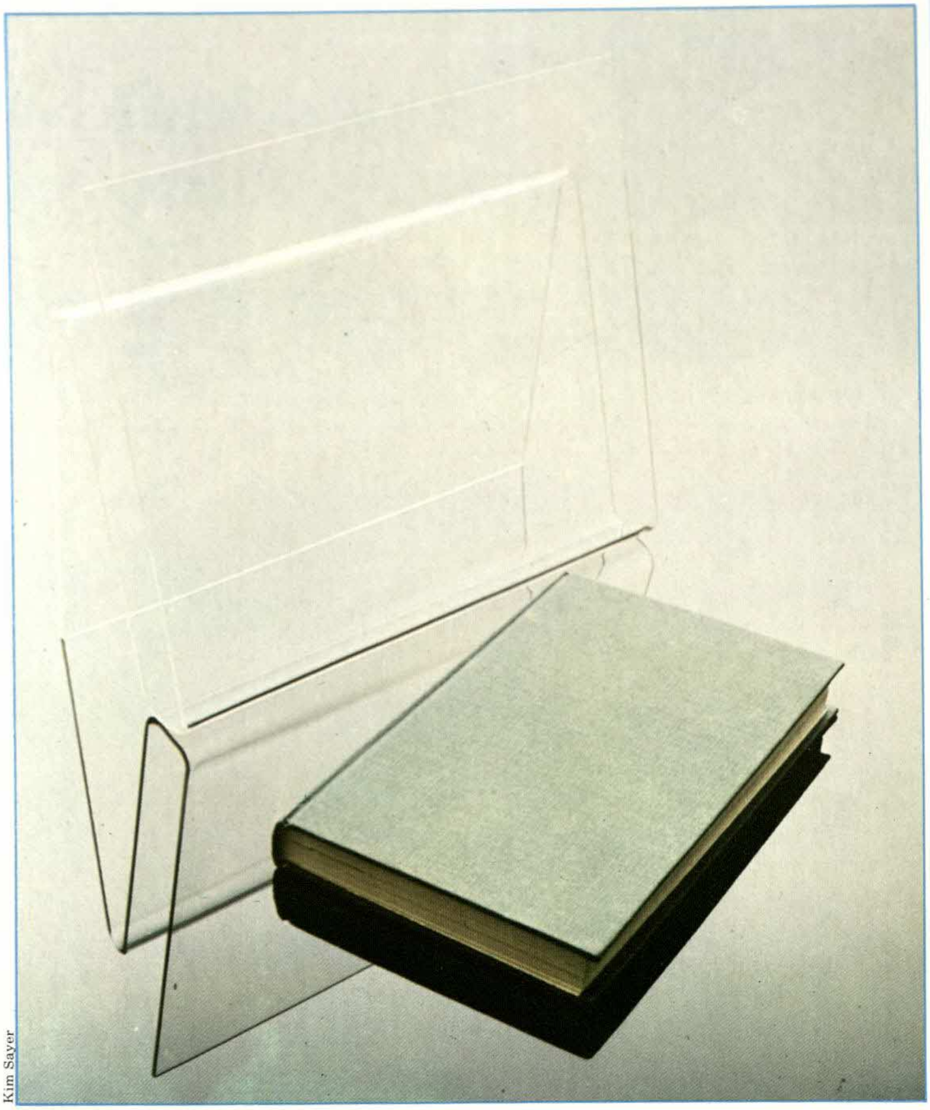
Strip heater.
Burner on gas cooker or blowlamp for heating bar.
Carpenter's square.
Pair of pliers.
Transparent acrylic sheet 28cm x 63cm x 6mm (11"x 24½"x ¼").
Hack saw and vice.
Fine silicon carbide paper.
Metal polish such as Brasso.
Cloth for polishing.
G-clamp.
Chinagraph pencil.
Two pieces of wood to protect the acrylic from pressure while in the vice.
Asbestos gloves.

☐ Leaving the protective paper on the acrylic, cut out the acrylic rectangle and polish the edges following instructions in Plastics chapter 21, page 1640.

☐ Peel off the protective adhesive paper.

**Bending.** The acrylic is now ready to be heated and bent into the required shape. To obtain the two bends of 90° the heated acrylic will be held against a carpenter's square in a vice (fig.4). The bend of 30° is judged by eye, and the angle can vary as long as the book stand will actually stand up.

☐ Using a chinagraph pencil, lightly mark out the positions for the three bends (fig.5) on the surface of the acrylic.



Kim Sayer

*The recipe book stand will hold a cook book open while in use and protect it from grease and food marks.*

☐ Secure carpenter's square in vice.

☐ Remove the steel bar from the strip heater.

☐ Put on asbestos gloves and hold steel bar with pliers over a burner on a gas cooker, or heat with a blowlamp, until it is nearly red hot (for about ten minutes). Try to heat the bar evenly by running it backwards and forwards in the flame. If the bar is not of an even heat, the bend in the acrylic will be irregular. It is a good idea to overheat the bar and let it cool down so that the heat will even out.

☐ Replace the heated bar in the strip heater on the aluminium support.

☐ Place the acrylic sheet on the strip heater so that the line for the first bend is exactly over the steel bar. Butt the edge of the acrylic against the nails to ensure that the bend will be straight.

If the surface of the acrylic starts to blister, this means that the bar is too hot.

☐ Once the acrylic is soft (after about one minute) remove from the strip heater and, holding the sheet on either side of the heated line, start to bend the acrylic.

☐ Hold the acrylic against the carpenter's square to make a bend of 90° (see fig.4).

☐ After a few minutes, dip the acrylic in cold water or hold under a running tap to cool and harden the bend.

(If the bend has gone cloudy, or has cracked, this means that the acrylic was not hot enough.)

☐ Position the acrylic over the bar for the second bend.

☐ When the acrylic is hot enough, remove from the strip heater, and bend against the carpenter's square to obtain another angle of 90°.

You must now bend the piece of acrylic that will prop up the book stand. This must be a bend of about 30°.

☐ Heat the bar, and bend the acrylic along the line as before. Hold the acrylic against the carpenter's square to obtain an angle of 90° and then bend further until the angle is about 30°. Cool and harden as before and the recipe book stand is complete.

## Egg rack

This egg rack involves cutting out a rectangle of acrylic sheet, drilling eight holes to take eggs, and then bending along two lines to make 'legs' for the rack.

**You will need:**

Transparent acrylic sheet 35.2cm x 12cm x 9mm (14"x 5"x ⅜").
Strip heater.
Burner on gas cooker or blowlamp.
Pair of pliers.
Steel rule.
Carpenter's square.
4cm (1½") diameter hole cutter such as those made by Enox. These are sold in tool shops for cutting holes in metal tanks.
Electric drill such as by Black & Decker.
Wood file.
Fine silicon carbide paper.
Metal polish such as Brasso.
Dowel 2.5cm (1") diameter, about 10cm (4") long.
Two pieces of plywood 6mm (¼") thick, one 20cm x 8cm (8"x 3") and one 25cm x 18cm (10"x 7").
G-clamp.
Vice.
Hack saw.
Pencil.
Chinagraph pencil.

☐ Leaving the protective adhesive paper on the surface of the acrylic, cut out required shape following instructions in Plastics chapter 21.

☐ Using pencil and ruler, mark out the positions of the centre of each hole on the protective paper (fig.6).

☐ Place the acrylic in the vice with a piece of wood on each side to protect the surface of the acrylic from pressure (fig.7). Make sure that there is wood behind the hole to be drilled—this will support the acrylic during drilling and prevent it splintering or cracking.

**Cutting the holes.** An electric drill is essential for this.

☐ Fix hole cutter (fig.8) on to electric drill.

In the centre of the hole cutter is a 6mm (¼") drill which is the first thing to come into contact with the acrylic. Guide the point of the drill on to the position marked for the centre of the hole.

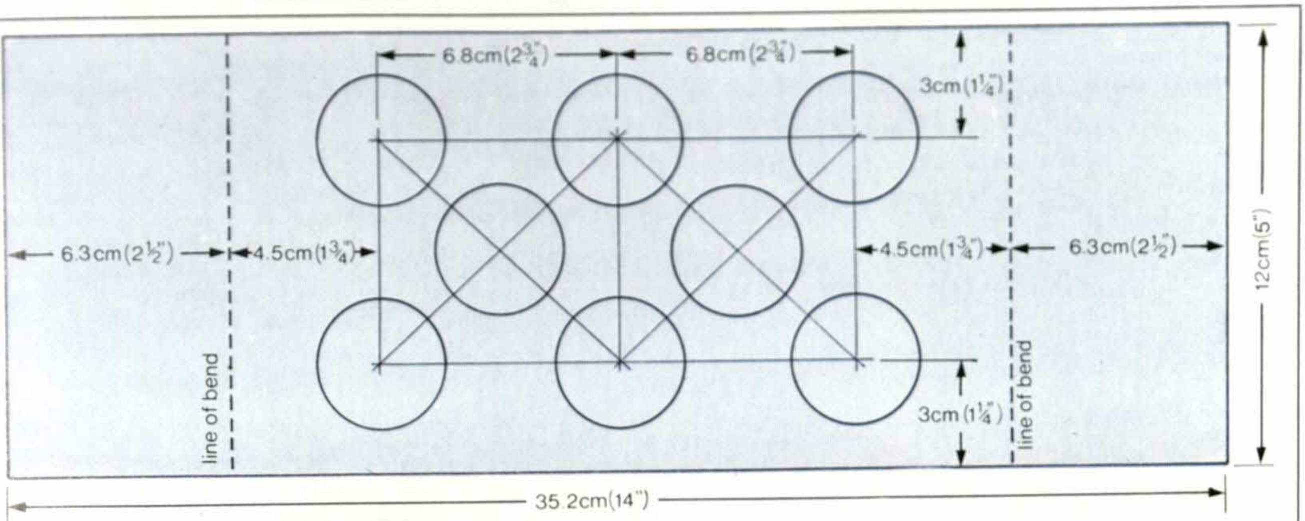
☐ Gently bring the rotating cutter into contact with the surface of the acrylic making sure that it is touching on all sides at once.

Friction of the cutting tool against the acrylic will generate heat, and may damage the acrylic by melting it if you are not careful. To avoid this happening, occasionally draw back the tool so that it can cool in the air.

☐ Drill each hole in this way.

**Finishing.** The inside edges of the drill holes must be smoothed and polished.

☐ Leaving the acrylic in the vice, and



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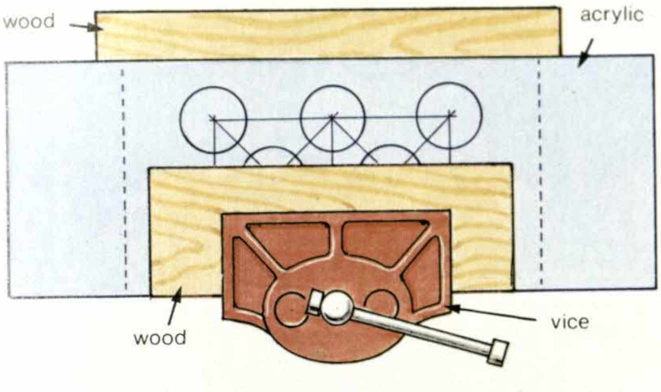

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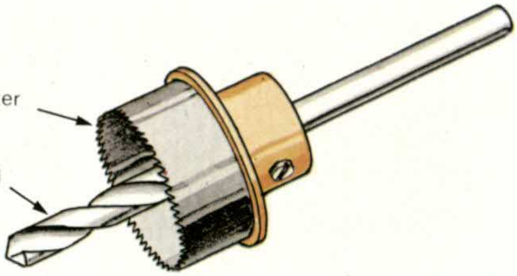
6. *Location of holes to be drilled.* 7. *Wood supports the acrylic during drilling.* 8. *Construction of hole cutter with drill in the centre.*



8

Paul Williams

using the steel rule scrape off any scratches or surface blisters caused by the cutter. To do this insert the ruler through one of the holes, and holding the ruler in both hands on either side of the sheet, scrape away the inside surface.

It will be necessary to move the acrylic about in the vice to get at all the holes.

☐ When all the scratches and blisters have been removed, wrap a piece of fine silicon carbide paper round the piece of dowel, put a few drops of water on it and sand down the insides of each hole.

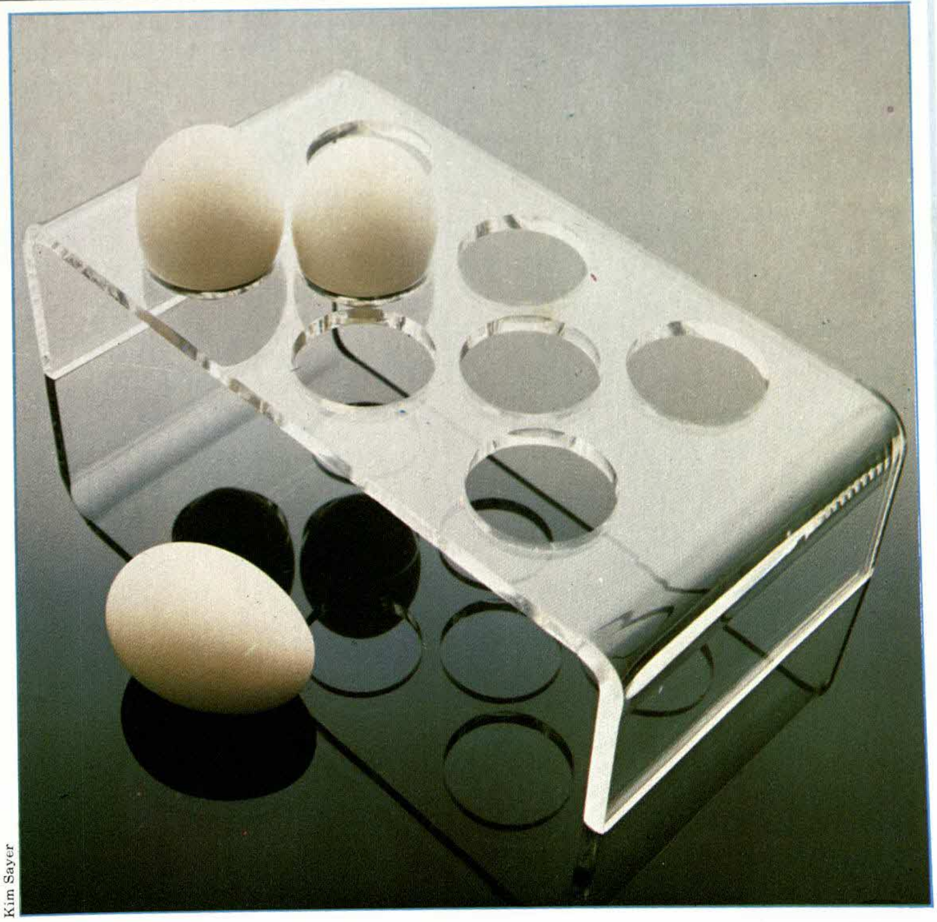
☐ Polish the insides of the holes with metal polish on a rag wrapped round the piece of dowel.

☐ Smooth and polish the edges of the acrylic as for the recipe book stand.

**Bending the legs.** The bend lines are 6.3cm (2½") from each end, see fig.6. As the acrylic is thicker for the egg rack, it will take longer to heat the acrylic for bending (about 2 minutes).

☐ Mark out the lines for the two bends with a chinagraph pencil.

☐ Bend each end to an angle of 90°, using a strip heater and carpenter's square as before.

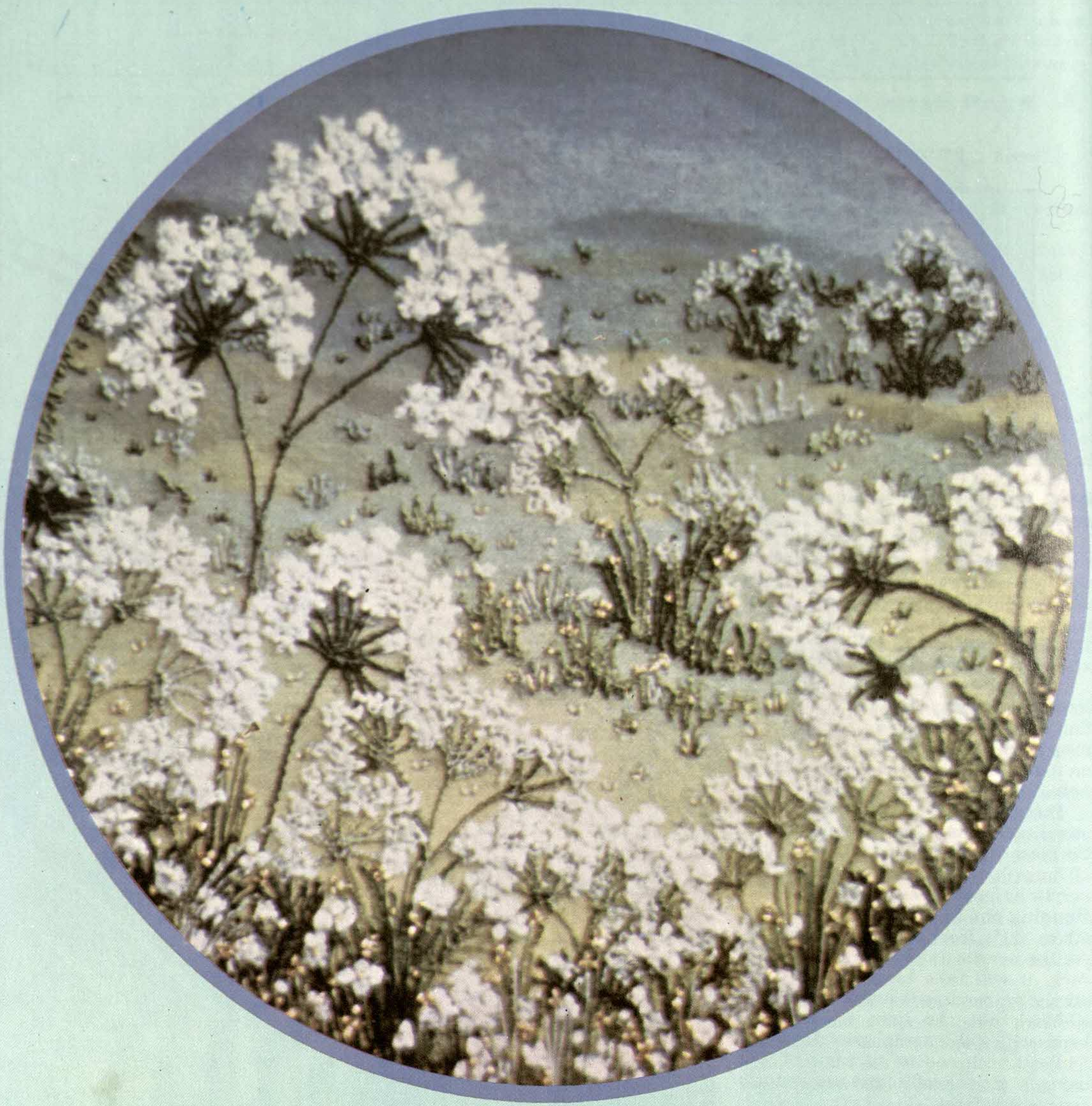


*This egg rack holds eight eggs, but the dimensions could easily be reduced or enlarged to hold less or more.*

Kim Sayer

# Paint and needle pictures

The Chinese were probably the first people to use the impressive technique of embroidering on hand-painted fabric. The subtle combination of paint and embroidery was, to them, an ideal way of interpreting the delicate landscape that surrounded them. The fabric they used was fine silk, on which they applied rich inks as well as watercolour paints, and finally, splendid silk yarns, giving the flat fabric painting the



V. Warren/Crafts Advisory Committee

*Two highly original landscapes created by Verina Warren who has combined various painting and embroidery techniques on a linen ground.*

added bonus of a third dimension.

To achieve an up-to-date echo of this traditional skill, you need only the most basic knowledge of sewing plus a slight sense of abandon to paint free-hand, impressionistic designs on cloth. This is a technique that whispers rather than roars, and you should bear this in mind when you choose your subject matter. Designs could be taken from sources such as spiders' webs, leaf skeletons, misty sunsets and soft seascapes.

**You will need:**

Picture frame, or wood, nails and glue for assembling your own frame.

Staple gun.

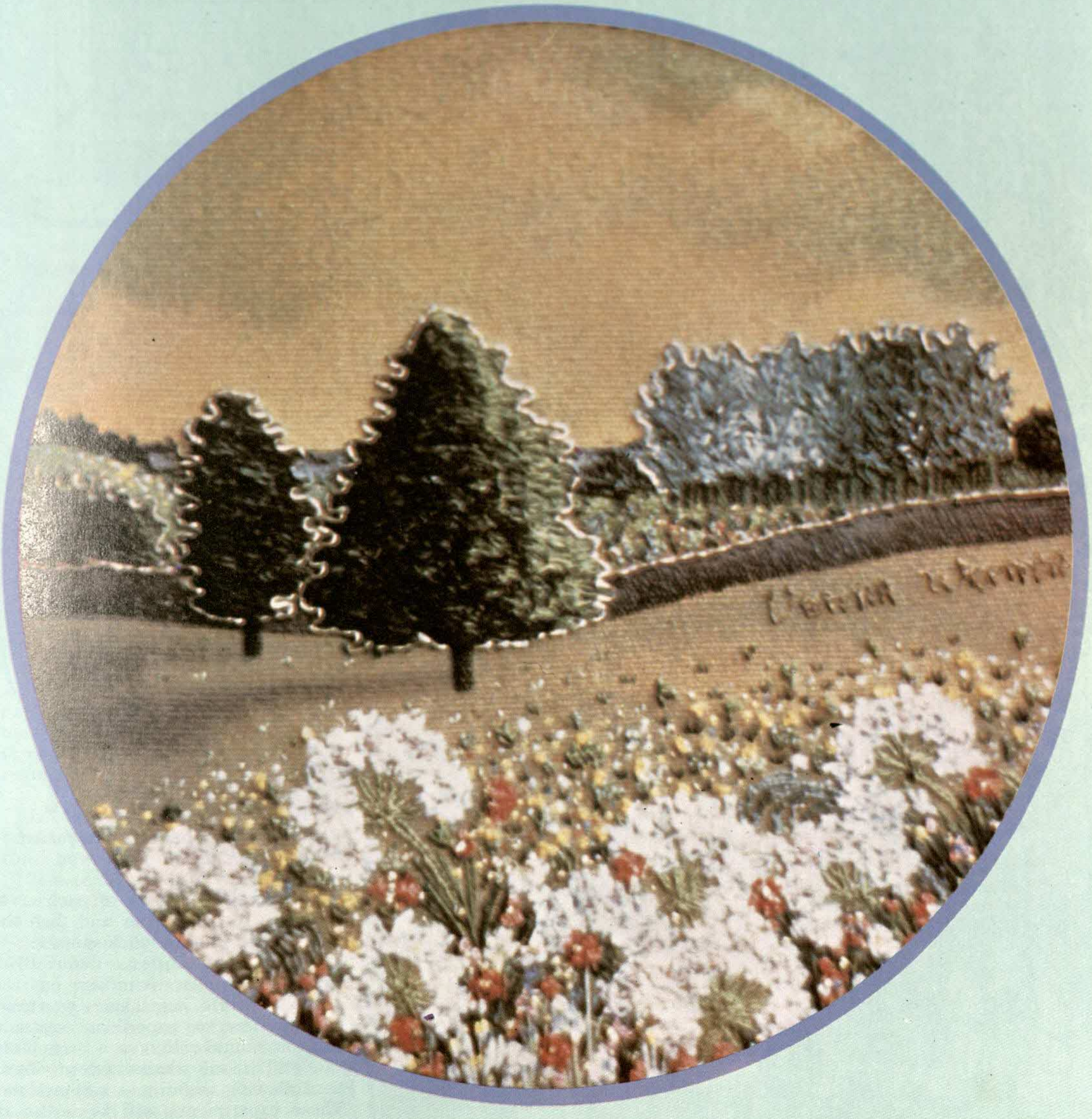
Set of ordinary watercolours, drawing inks or oil-based fabric paints.

Medium-sized paintbrush and water.

Natural-fibre fabric: this fabric should be more than double the size of your frame so it can be tacked to frame.

Selection of sewing threads in at least two different thicknesses and in the colours of your choice.

**Fabric.** Best results will be obtained from using cloth that is as near 100% natural fibre as possible, since synthetics tend to resist colours. Ideal materials are: cotton sheeting, linen, calico, canvas and, if you can afford it, Jap silk.



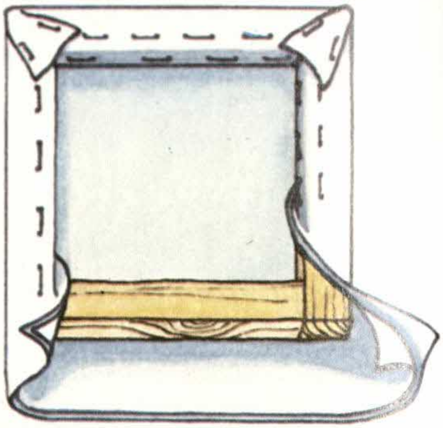
*To make the landscapes paint was sprayed on the linen, then some embroidery was worked by machine. More embroidery was added by hand.*

Theo Bergström

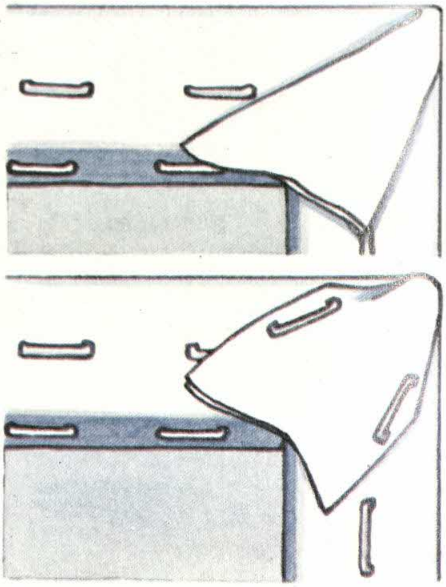
*Painting techniques and hand embroidery were combined by Mary Franks to make this subtle, impressionistic study of dandelions.*

Work on two layers of fine fabric. This allows a firmer foundation when embroidering, and also gives a substantial cover for the frame.

**Preparing the painting surface.** Stretch the chosen fabric over the frame and secure it with a staple gun (fig.1). It is important that the fabric be stretched as tightly as possible and the corners neatly folded under (fig.2).



1. *The fabric is stretched over the frame and secured with a staple gun.*

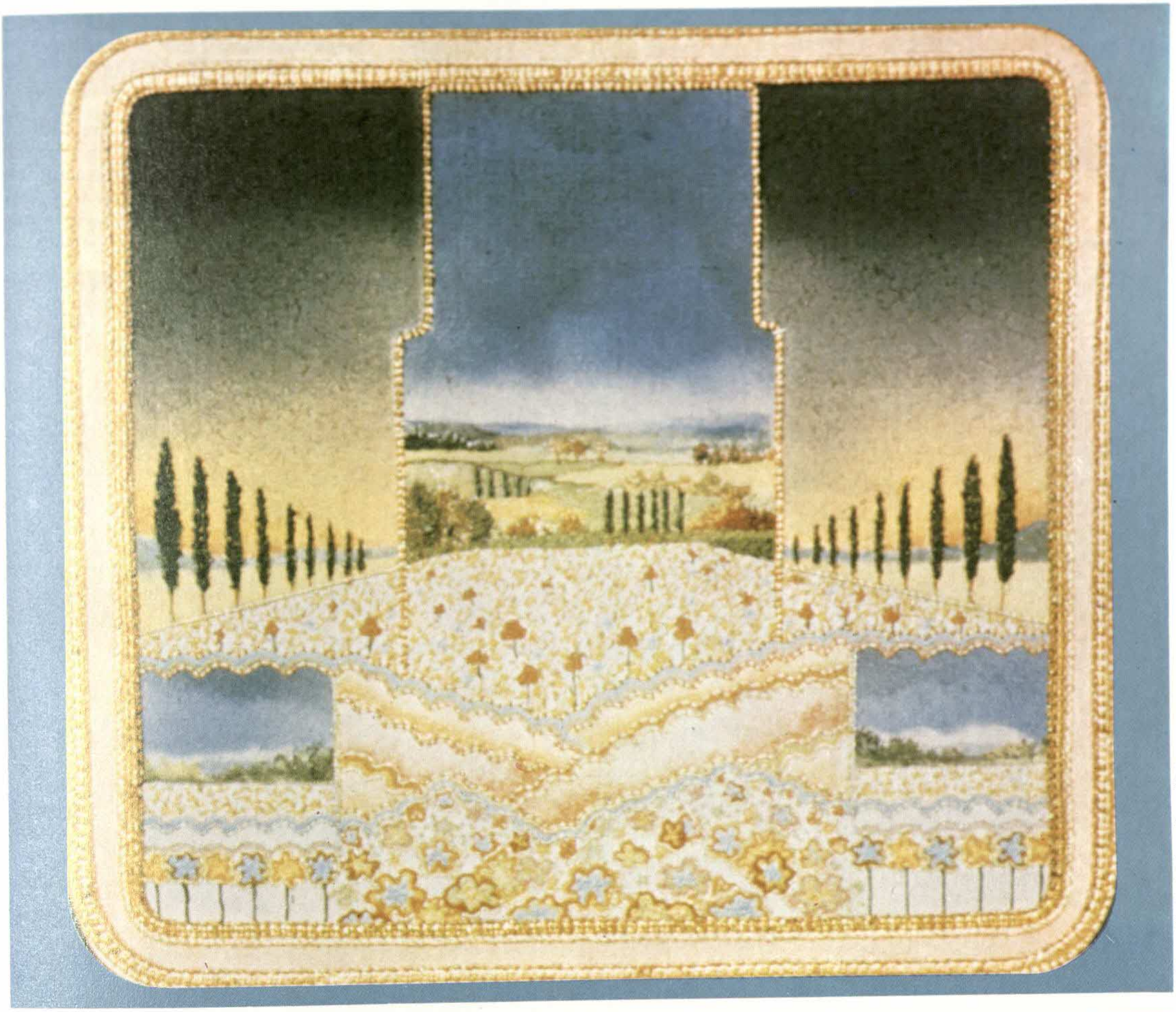


2. *The corners of the fabric are folded as shown before stapling.*

Work from the centre of each strut outwards to one corner and then the other to help prevent puckering.

**Painting techniques.** Before you attempt to start painting on the stretched fabric, it will serve as a good introduction to experiment with a paintbrush and colour on a spare piece of cloth, to see what different effects the following techniques will produce. These experiments will be useful in producing your final image.

☐ Flick the end of a loaded paintbrush with your finger, spraying the colour on to the cloth in small dots.



V. Warren/Crafts Advisory Committee

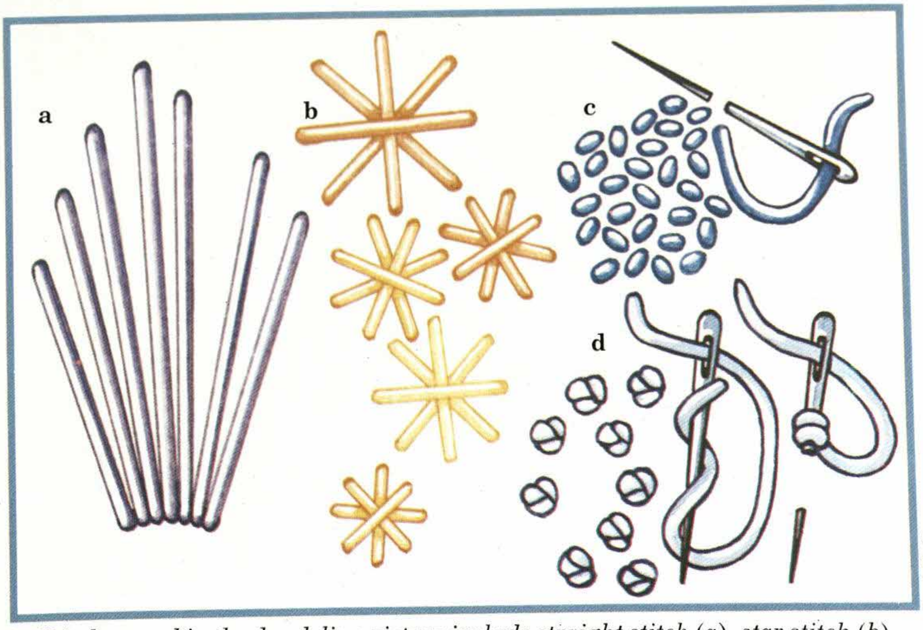
*A formalized landscape created by the controlled use of paint, plus harmonious use of embroidery stitches. Pure gold thread couched down with silk adds richness. Verina Warren.*

☐ Let lazy drops fall off the end of the brush, watch the watermark form, and think how you can employ it.

☐ Moisten a patch of fabric first and then apply specks of concentrated colour.

**Stitching.** Different stitches combined with different types and widths of thread will produce delicately varied textures and designs. The stitches used in the dandelion picture (opposite) include the straight stitch, star stitch and seeding which looks like very small running stitches. French knots are also used (fig.3).

By building up either the image itself or the background to it by stitchery a fragile interpretive 'painting' will emerge from the combined techniques.



Coral Mula

**3.** *Stitches used in the dandelion picture include straight stitch (a), star stitch (b), seeding (c) (stitches should be of equal length) and French knots (d).*

# Croissants to shape and bake

Edible arts 9

The art of making appetizing, flaky, crescent-shaped rolls is described in this chapter. These light, tasty croissants will make a delicious breakfast treat—and the dough can be made the night before.

## Croissants

When Budapest was besieged by the Turks in 1686, bakers working at night heard the invaders tunnelling beneath

Melvin Grey

the walls and raised the alarm. After the Turks' defeat, the proud bakers made their rolls into crescents, the symbol of the Ottoman empire.

*Home-made croissants have a delicious flavour and a light, flaky crust. Oven-warm croissants spread with fresh butter and served with hot coffee make a mouth watering continental-style breakfast.*

**You will need:**
2 teaspoons sugar.
200ml (½ pint less 4 tablespoons) warm water.
1 level tablespoon dried yeast.
400gm (1lb) strong, plain white flour.
2 teaspoons salt.
25gm (1oz) butter.
1 egg, beaten.
150-200gm (6-8oz) fat (half butter, half lard mixed together), chilled.
**For the glaze:**
1 egg, beaten.
½ teaspoon sugar.
2 teaspoons water.

☐ Dissolve the sugar in the warm water, sprinkle on the yeast and leave for 10 minutes or until frothy.

☐ Mix the flour and salt and rub in the butter.

☐ Add the frothy yeast mixture and one beaten egg. Work to a firm dough, adding a little extra flour if needed, until the sides of the bowl are clean.

☐ Knead the dough on a lightly floured surface for about 10 minutes, until firm and elastic.

☐ Roll out into an oblong, measuring about 20cm x 50cm (8"x 20"), and turn so that a short edge faces you.

☐ Divide chilled fat into three pieces.

☐ Dot one-third of the fat over the two-thirds of dough furthest away from you.

☐ Fold the dough in three, bringing up the plain dough first, then covering it with the third of dough furthest away from you.

☐ Turn the dough so that the top fold is on your right and seal raw edges by pressing with a rolling pin.

☐ Roll out the dough into the original oblong shape and add the second portion of chilled fat in the same way as before.

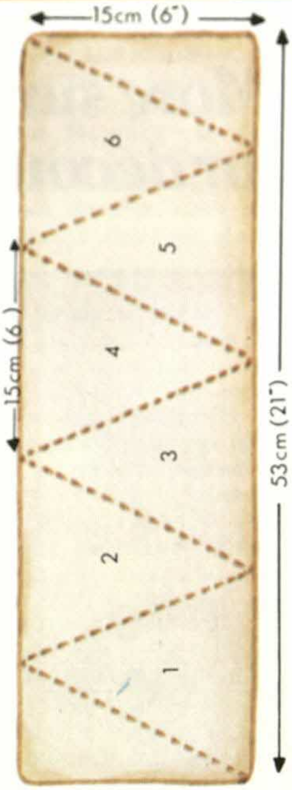
☐ Repeat the processes again to add the third portion of fat, then place the dough in a lightly oiled polythene bag and chill for 30 minutes.

☐ Roll the chilled dough into the same oblong shape, and repeat folding and rolling three more times to ensure the fat is evenly distributed, then chill again for 30 minutes. Alternatively the dough can be tightly sealed in polythene at this stage and stored in the refrigerator overnight.

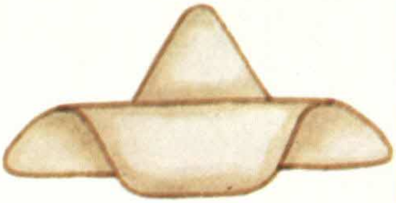
☐ Now roll the dough into a rectangle measuring about 33cm x 55cm (13"x 22"). Cover with oiled polythene and leave to rest for 10 minutes.

☐ Trim dough edges leaving a rectangle 30cm x 53cm (12"x 21") and cut in half lengthways. Cut each strip into six triangles 15cm (6") high and 15cm (6") across the base as shown in fig.1a.

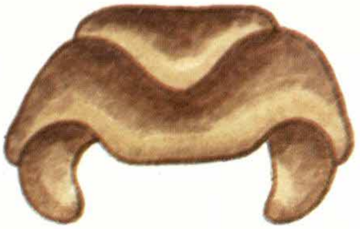
☐ Shape the croissants by rolling each triangle towards the point (fig.1b). Brush tops with a little beaten egg to seal edges. Curve into crescent shapes (fig.1c).



1a. *Six triangles cut in dough.*



1b. *Roll triangle towards point.*



Victoria Drew

1c. *Brush with beaten egg to seal edges, then shape into crescent.*

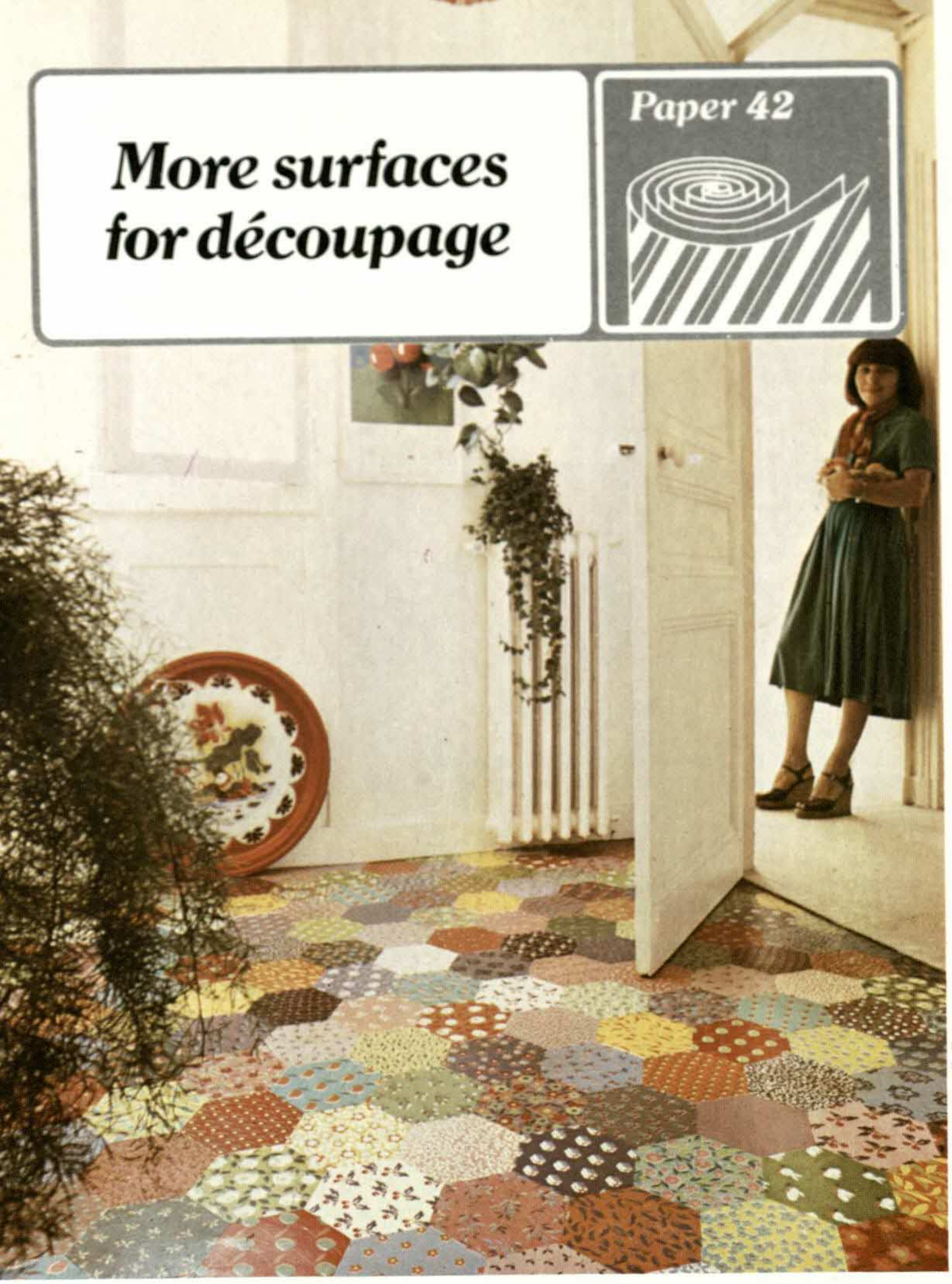
☐ Mix remaining beaten egg with ½ teaspoon sugar and 2 teaspoons water.

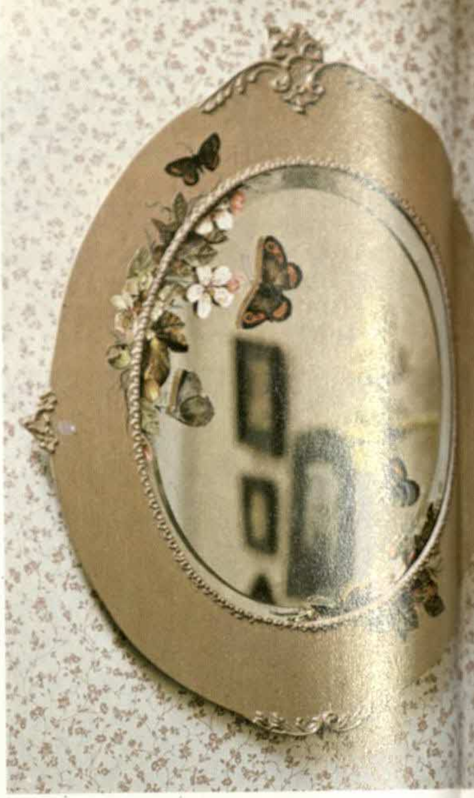
☐ Place croissants on greased baking trays. Brush on the beaten glaze and cover the rolls with oiled polythene.

☐ Leave at room temperature for about 30 minutes, until light and puffy, then remove polythene and brush with more glaze.

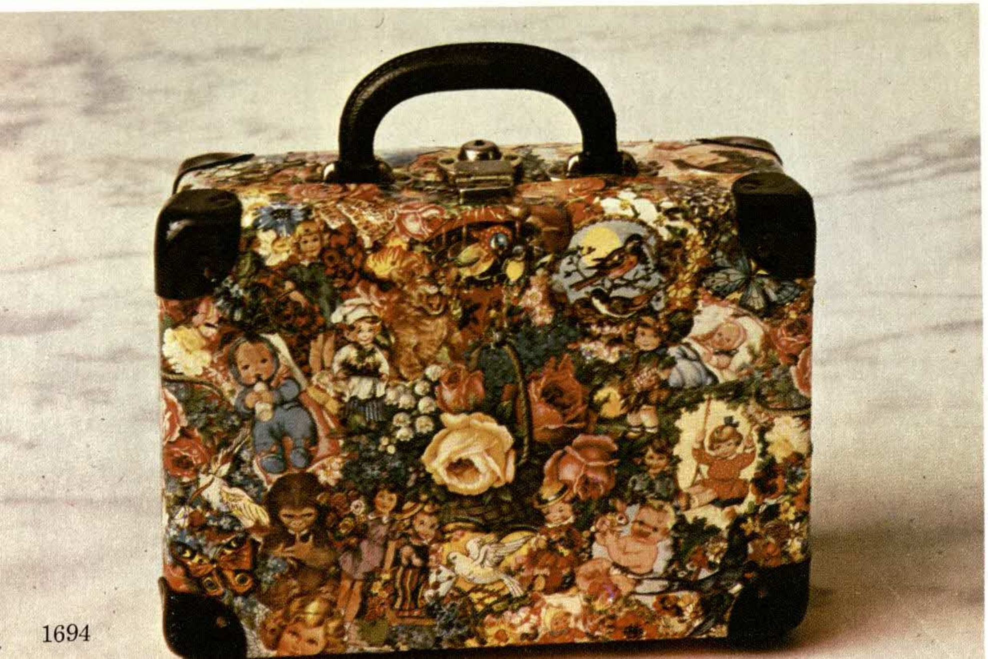
☐ Bake in the centre of an oven preheated to 220°C (425°F), gas mark 7 for 15-20 minutes.

# More surfaces for découpage



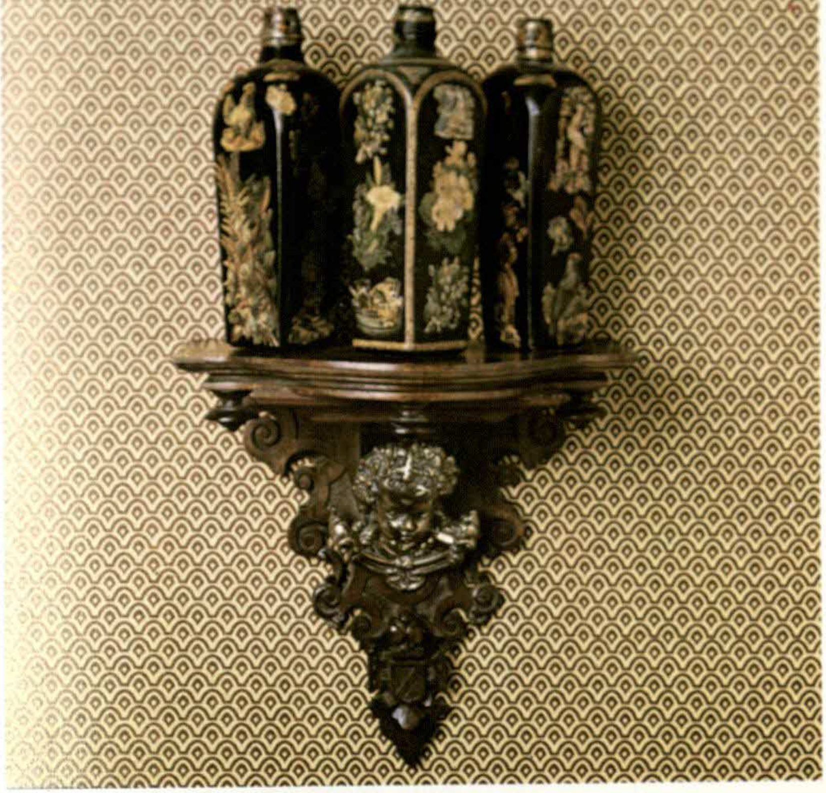


Maison de Marie Claire/Korniloff

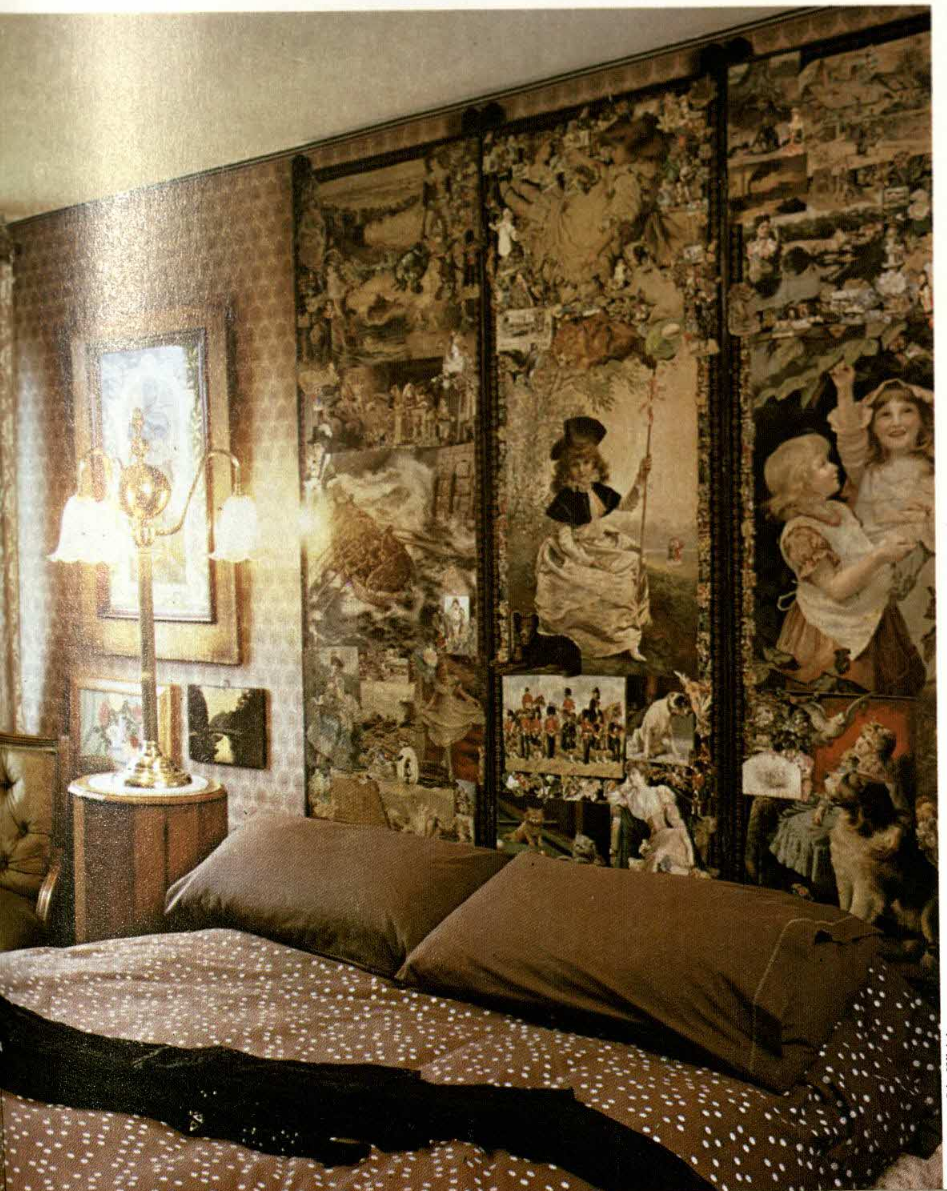


Camera Press

Jerry Tubby



Kim Sayer



Liz Whiting

There is no limit to the area you can decorate with découpage. With immense patience and innumerable prints you could, in theory, decorate an entire room; découpage floors, like the one shown here for instance, can look superb. In fact, the découpage base may be made of almost anything with a hard and durable surface: glass, metal, ceramics and even plastics are suitable.

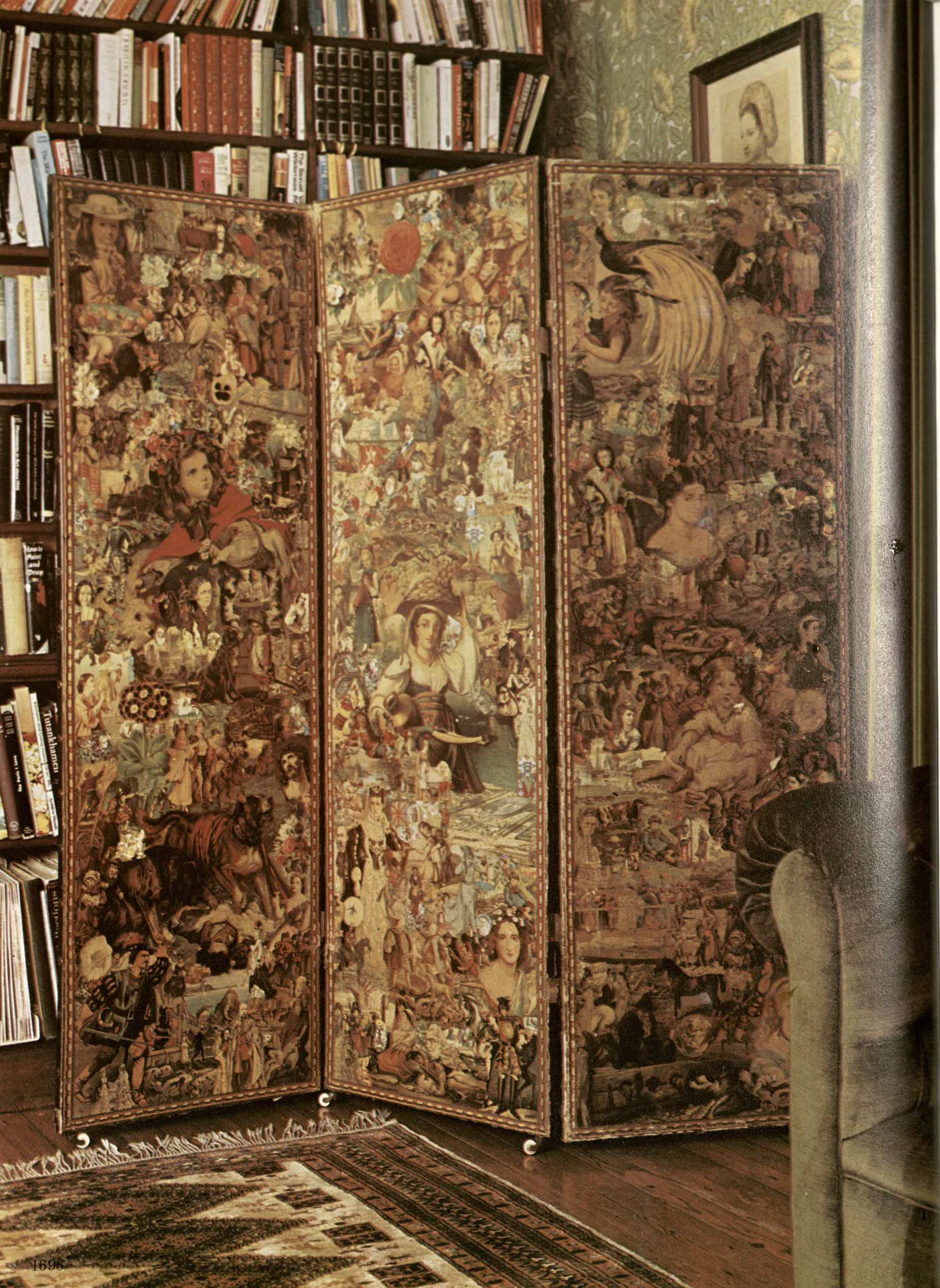
## A découpage screen

A screen composed of three or more panels is also a suitable subject for découpage, and planning and decorating one so that it is totally covered with pictures can be a very rewarding project. The finished screen can be displayed on a wall, as in the photograph, or used as a traditional room divider. The Victorians and Edwardians were particularly fond of découpage screens and used to cover them with decorative prints, pictures from newspapers and magazines, and greeting cards. The numerous coats of varnish or shellac over the pictures gave them a yellowish glaze.

If you look in antique shops and sale rooms there are still many fascinating old prints to be found. These need not be in good condition as you will probably be cutting them up anyway. Alternatively, you may prefer to use modern designs and pictures, from posters, wrapping paper, greetings cards, wallpaper, newspaper clippings, and from many other sources. You could start with plain paper of simple design as a base and add borders or friezes of cut-outs. If you are using wallpaper, make sure it is not too thick, since it will create an uneven surface. Remember that prints used should be of a similar thickness in each project. When you are planning your screen, it often helps to decide on a theme or a group of colours. Make sure that you have enough prints to cover the area—you may need more than you think—and that you have a good variety. Light and darkness, interest and drama are important elements for a large area such as this, which can easily look monotonous if there are not enough contrasts.

If you are using an old, fabric-covered screen as a base for découpage, remove any tacks, strip off the fabric covering, rub down the frame and attach pieces of hardboard to it; otherwise construct your own frame.

*Above: (left) découpage makes an unusual patchwork floor; (centre) a mirror embellished with découpage; (right) jars with their original prints. Below: (left) a pretty attaché case covered with prints; (right) a découpage screen used as a wall panel.*



**To make panels you will need:**
Hardboard cut to the size of each panel.
Wooden battens 50mm x 25mm (2″x 1″) for each panel, three times the length and three times the width. (These strengthen the back of the hardboard and prevent warping.)
A woodworking adhesive.
Panel pins 20mm (¾″).
Hammer and screwdriver.
Decorator's size, such as Polycell.
A hand saw.
Screen hinges which allow the panels to fold both ways, 2 hinges per join, and screws.
Chisel.
Gloss paint, primer and paintbrush (optional).

☐ Saw the battens into the correct lengths and glue and nail them together and then to the rough side of the hardboard (fig.1). Allow the panels to dry flat, away from direct heat. Keep them flat during all stages of your work.

☐ Coat the hardboard and frame with decorator's size to seal it.

☐ Chisel out an area the size of each hinge on the battens. Screw on one side of each hinge only (fig.2).

**To decorate screen you will need:**
A selection of cuttings, prints etc.
About 0.5 litre (1 pint) clear polyurethane varnish for each panel, or Podgy. (Podgy is a product specially designed for découpage and can be used, not only instead of varnish, but also instead of sealer and glue, since it combines these three functions. It is much quicker to use than conventional products: one coat of Podgy over your prints is the equivalent of several coats of varnish.)
A wood-to-paper adhesive such as Bostik 3, or Podgy.
Chalk or pencil, wallpaper roller.
Scissors.
A soft cloth to dust the surfaces between each coat of varnish.
A 50mm (2″) soft household paintbrush.

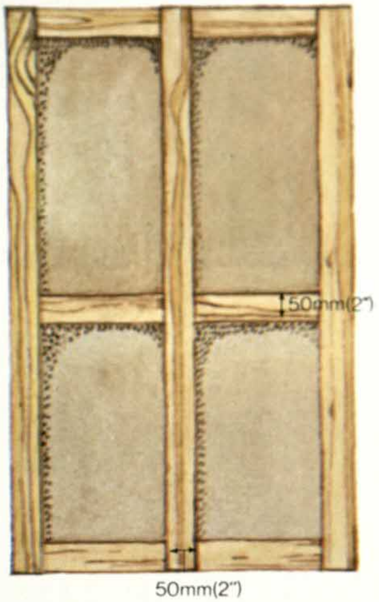
☐ Cut out the prints carefully as discussed in the previous chapter.

☐ With each panel flat on the floor or a table, move the prints around on them until you are satisfied with their layout. Cut away the parts of the design which overlap: the double thickness would be more difficult to cover with varnish.

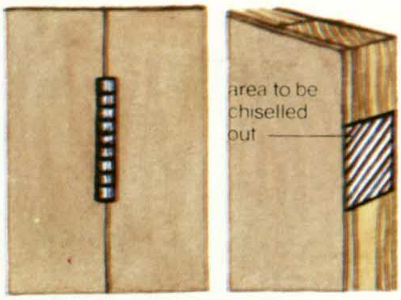
☐ Mark the position of each piece in chalk or pencil on the board (fig.3). You could number the back of each piece and mark the same number on the area where it will be. Then its place on the board can be easily found when gluing.

☐ Starting from the centre and dealing with one print at a time, glue the prints evenly and stick them down with glue or Podgy. Make sure that all the edges are firmly stuck down, particularly if you are using glue, since the varnish could seep underneath. Roll out any air bubbles with the wallpaper roller and wipe away any excess glue. It is best to work right up to and over the edges of the screen (fig.4).

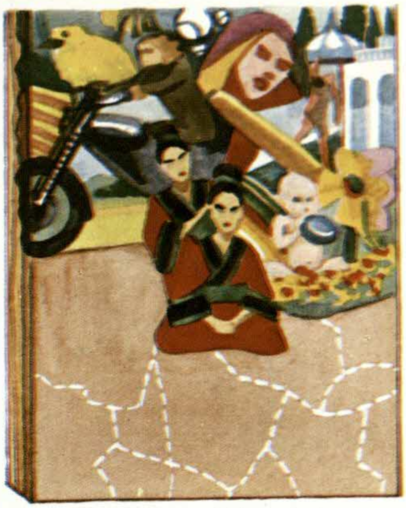
*You can make a screen like this original Victorian one if you use old prints from junk shops or Victorian magazines.*



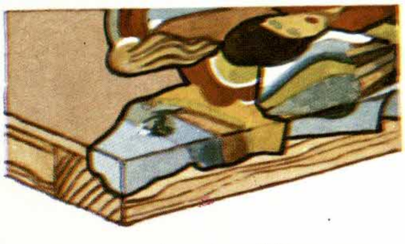
1. *Position of battens on the panel.*



2. *Affixing the hinges.*



3. *Mark positions of the prints.*



4. *Work over the edge of the screen.*

Coral Mula

☐ Dry the panels thoroughly in an airy room, keeping them flat. The adhesive must be absolutely dry and the prints perfectly stuck down at the edges before you start to varnish.

**Varnishing.** Using long, even strokes, brush on a thin coat of varnish. Work as quickly as possible and try not to let the varnish strokes overlap each other. After each coat, go round the corners and edges with a brush to prevent runs. If they do occur, sand them smooth as described in the previous chapter. Rub the surface with a soft cloth to remove dust and hairs before applying each coat. Three or four coats of varnish are usually enough for this type of découpage, and will give a tough glaze which can be wiped clean with a damp cloth.

**Assembling.** If you like, you can prime and paint the back of the screen with gloss paint. Attach the second side of each hinge to the corresponding panels.

## Other surfaces

Découpage on glass, metal, plastic or ceramic objects, as with découpage on a screen, requires no sinking of the design beneath layers of varnish. Therefore fewer coats of varnish are needed and there is no sanding down between coats.

You must decide for yourself how many coats of varnish will be necessary and whether to coat the whole object or just the print itself. When applying découpage to a mirror or a glass jar, it is better to coat the print only, extending the varnish fractionally over the edges, as varnish will dull the glass.

Of course you can also apply découpage under glass. Seal the back of the print or prints with acrylic sealer or Podgy, to prevent absorption. Spread glue over the inside surface of the glass and place the right side of the print on the glued area. Press out excess glue from the centre of each print to the edges. When it is dry use a vinegar and water solution or compatible solvent to wipe away excess glue, since it will leave a haze on the glass if not removed. Then cover the back of the design with a coat of clear polyurethane varnish. If you wish, you can paint a background colour over and around the design. This method could be applied to a vase, plate or ashtray, or to a glass-topped table.

# Waistcoats in three lengths

Cloth — sewing 21

Sandra Lousada

*A short waistcoat made in quilted fabric, lined and piped with green cotton.*

The waistcoat has been in existence for over three hundred years and has undergone frequent changes of shape during this period. It was originally a man's garment and at one time had sleeves and was made of costly and richly embroidered fabric. Later it became part of a suit and then for a while it almost disappeared except for formal wear. Now, however, waistcoats have recovered their popularity with men and women alike and are fashionable for any occasion. This revival is hardly surprising as it is one of the least expensive ways of adding variety and individuality to any wardrobe.

The basic waistcoat pattern given here has two pieces only and lends itself to several adaptations. It is made without buttons and is completely lined, so if you make it in a printed fabric, lined with a co-ordinating print or plain fabric of a similar weight, it can be worn either side out.

Choose a fairly firm fabric. If you want to be original, it is often possible to find cotton remnants in the soft furnishing departments. Alternatively, use a plain fabric and embroider or print your own design. Bold appliqué on a neutral background could enliven a very plain waistcoat. Heavy-weight silk, quilted fabric, brocade, velveteen and some fur fabrics are also suitable.

Three lengths are given on the pattern: above the knee, hip length and just below the waist. If you would prefer a different length, lengthen or shorten the pattern accordingly. Straight and curved lines are given for the lower edge of the centre front.

## The pattern

**You will need:**

Graph paper.
Pencil and ruler.
Metre (yard) stick (optional).

**Size:**

The pattern is given in two sizes: 12 and 16. If you want to make a size 10 or 14, use the pattern one size larger and when making up take 2.5cm (1") turnings on the side and shoulder seams, and 2cm ($\frac{3}{4}$") around armholes.

12: 86cm (34") bust, 91.5cm (36") hips:
16: 97cm (38") bust, 101.5cm (40") hips.

Note: check your size before beginning work, the ease allowed on the pattern is 5cm (2"). If you intend wearing your waistcoat over thick sweaters, it will be necessary to make an allowance for this.

☐ Draw the front and back waistcoat pattern (fig.1) to scale on graph paper to the length and size required. Note that a 1.5cm ($\frac{5}{8}$") seam allowance has been made on all edges except the centre back which is placed on the fold when cutting out in fabric.

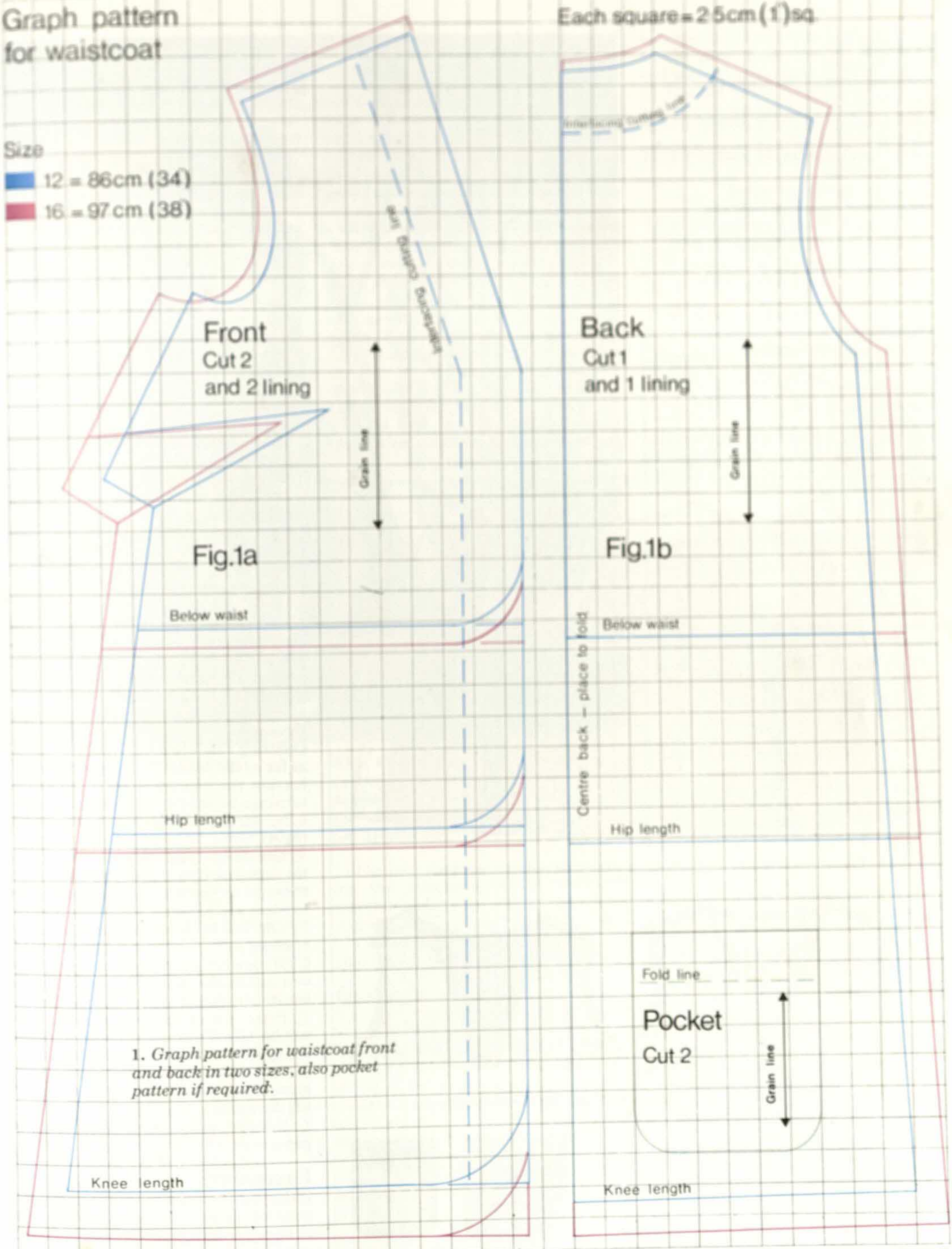
# Graph pattern for waistcoat

Each square = 2·5cm (1") sq.

Size

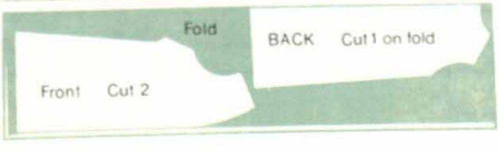
🟦 12 = 86cm (34")

🟥 16 = 97 cm (38")



1. *Graph pattern for waistcoat front and back in two sizes, also pocket pattern if required.*

There is a 1·5cm (⅝") seam allowance on all edges except the centre-back (placed on a fold)



2. *Sample 90cm (36") cutting layout.*

## Making up

**You will need:**

2m (2¼yd) of 90cm (36″) fabric for the above knee version.

1.40m (1½yd) of 90cm (36″) fabric for the hip length waistcoat.

1.20m (1¼yd) of 90cm (36″) fabric for the short waistcoat.

The same quantity of lining.

Note: These measurements are approximate. Make a cutting layout as described in Sewing chapter 8, page 684, for exact amount for your size or if using fabric of a different width.

Matching thread.

0.25m (¼yd) of 90cm (36″) interfacing (optional).

**Cutting out the fabric**

☐ Position the two pattern pieces on fabric placing the centre back on a fold and cutting out the front twice (once in reverse).

The grain line must be on the straight grain of the fabric. (See suggested cutting layout for 90cm (36″) fabric in fig.2 on previous page.)

☐ Pin into place and cut out.

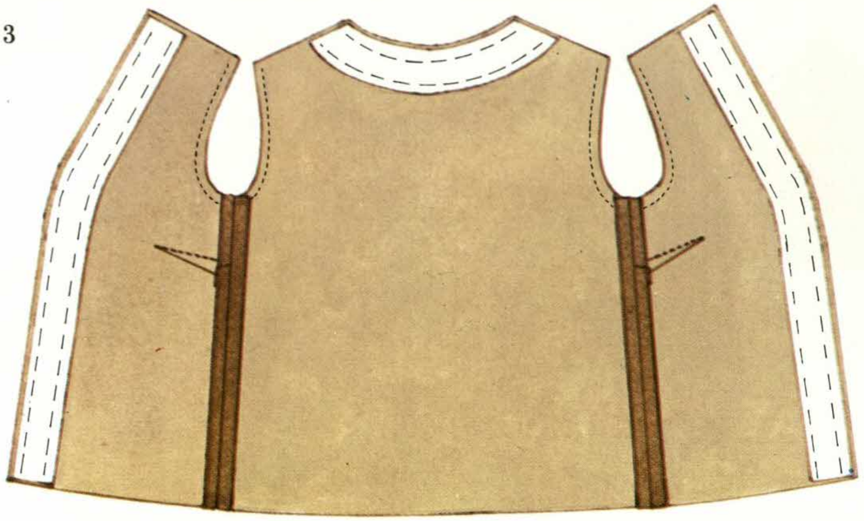
☐ Mark in the front darts and the centre back with single tailor's tacks (Sewing chapter 9, page 716). Cut out and mark the lining in the same way.

☐ If your fabric requires interfacing use the waistcoat pattern and cut pieces of interfacing 5cm (2″) wide to fit the back neckline and front edges. With a rounded lower edge at the centre front, it is advisable to take the interfacing round the curve to the side seam and it may be necessary to make a join. If you are using a woven interfacing, the centre front and centre back pieces must be on the straight grain.

**Preparing for assembly**

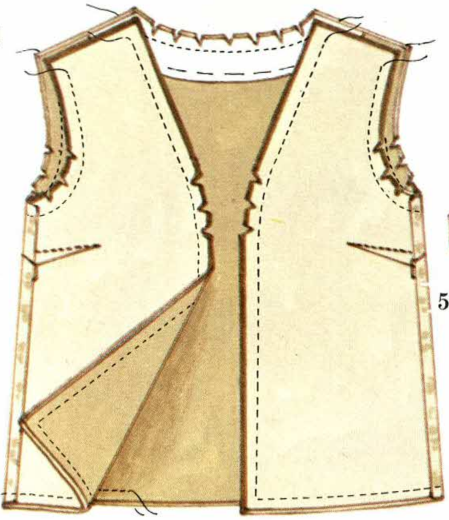
☐ Work a line of machine stay stitching 1cm (½″) from the raw edge and all round the armhole and neck edges of the back and two fronts to prevent the curves from stretching.

3



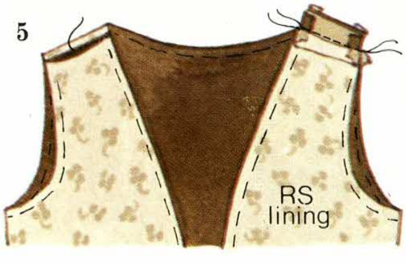
3. *The interfacing is stitched in place, then the side seams are sewn.*

4



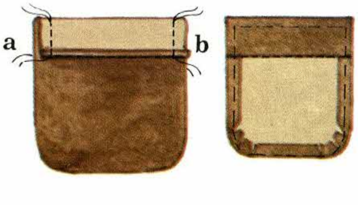
4. *Lining and fabric stitched together.*

5



5. *Stitching the shoulders.*

6



6. *Making up the pockets.*

Barbara Firth

☐ Working on one front and with right sides together pin and tack the dart, then machine stitch from the base of the dart to the point. Press the dart downwards. Repeat with the other front and two lining fronts.

☐ If you wish to embroider your waistcoat, now is the time to do this. Test out your design first to check that the finished result will be well balanced with the most pleasing effect. Draw the outline of your design on to your pattern. Pin in the dart, then hold the pattern against yourself and check in a mirror that the effect is as you imagined. Remember that you have a seam allowance on the pattern, so do not position your design too close to the edge. When you are satisfied, transfer the design to your fabric and complete the embroidery or other decoration. Press on the wrong side.

☐ Iron or tack interfacing to the wrong sides of the front edges and back neckline on the top fabric unless it is silk or satin, then to the lining.

**Joining the pieces**

☐ With right sides together, pin, tack and stitch the fronts to the back at the sides (fig.3). Press seams open. Join the side seams of the lining in the same way.

☐ With right sides together, matching the centre backs and underarm seams, pin and tack the two pieces together around the armholes and front and lower edges. Leave a 20cm (8″) opening along the back lower edge for turning through.

Omitting this opening, machine stitch as far as the seam line at the shoulders, leaving the shoulders open. Trim the turnings to 5mm (¼″) and clip the armhole, back neckline and front curves (fig.4).

☐ Carefully pulling the shoulders through the opening at the hem, turn through to the right side. Tack close to edges and press.

☐ Slip stitch the hem opening neatly to close.

☐ With right sides together, pin, tack and stitch the shoulder seams of the waistcoat, keeping the lining free.

☐ Press the seams open and trim to 1cm (⅜″). Trim the allowance on the lining shoulder seams to 1cm (⅜″).

☐ Turn in lining shoulder seam allowance and slip stitch each side invisibly (fig.5). Press.

☐ Remove all tacking stitches and press.

## Fastenings

☐ If you would like a fastening on your waistcoat, you can use loops and buttons, or have ties. Choose the most appropriate method for the fabric you are using. For instance, a decorative frog fastening worked in fancy cord could look attractive on velvet.

Sandra Lousada

## Chanel-style waistcoat

**You will need:**

Fabric, lining and interfacing.

Braid, about 4m ($4\frac{1}{2}$yd).

This waistcoat has the outer edges trimmed with braid and pockets added. It could be made in a rich fabric for evenings, or wool tweed to be worn with trousers or a skirt.

Make up the waistcoat as before, but before attaching lining make pockets.

☐ Following the graph (page 1699) make a pattern for the pocket. Position on the fabric, pin into place and cut out. Mark in the fold line.

☐ Turn under the top edge of the pocket for 5mm ($\frac{1}{4}$") and tack. Press and stitch, then fold the pocket along the fold line with right sides together to make the facing. Tack and stitch the sides of the facing to the pocket (fig.6a).

☐ Turn the facing to the right side, tack along the top fold and press.

☐ Turn under and tack the remaining seam allowance on the pocket, clipping the curves. Press. (fig.6b). If necessary slip stitch the facing to the wrong side of the pocket.

☐ Hand stitch braid securely to the pocket edges. Make one more pocket in the same way.

*This Chanel-style waistcoat was made in tweed, is hip length and has two pockets. It will take 70cm ($\frac{3}{4}$yd) of 137cm (54") wide fabric; 1.40m ($1\frac{1}{2}$yd) of 90cm (36") lining and 4m ($4\frac{1}{2}$yd) of braid.*

☐ Pin into position on the waistcoat, pin the shoulders of the waistcoat together and try on. Adjust the pocket position, tack and slip stitch.

☐ Line the waistcoat as before.

Hand stitch braid around all the edges.

## Quilted waistcoat

You can buy quilted fabric or make your own if you prefer.

**Quilting.** Choose fabrics for quilting carefully, having the main fabric and lining of the same weight. As quilting contracts the fabric, make the pattern a size larger.

When quilting your own fabric you will need the same quantity of wadding as you have fabric. Make sure that it will dry clean or wash compatibly with the fabric you are using.

☐ After cutting out the waistcoat in fabric, wadding and lining, place the back and two fronts wrong side downwards on the wadding.

☐ Working on a large, flat surface, tack the back and fronts to the wadding on the seam lines, then in horizontal and vertical lines about 10cm (4") apart.

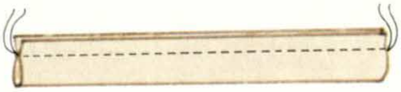
☐ You are now ready to quilt the top layer and wadding together. If you have no quilting or other guide on your machine, it will be necessary to draw your lines first with tailor's chalk, using a ruler.

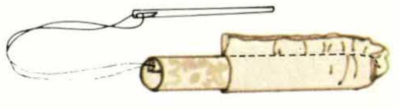
☐ After quilting make up the lined waistcoat as described, inserting rouleau ties if desired.

Note: to neaten the seams of the quilted fabric press open and catch stitch the seam allowance to the wadding.

### Rouleau ties— basic know-how

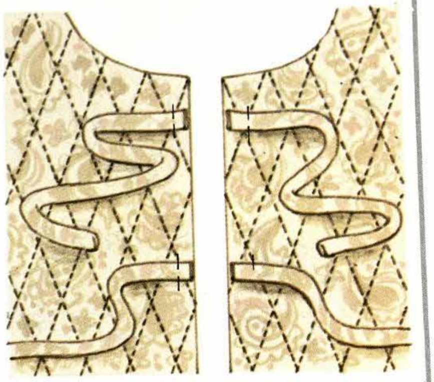
Cut a strip of fabric on the cross grain about 20cm (8") long and 4cm ($1\frac{1}{2}$") wide. Fold this strip lengthways with right sides facing and, taking 5mm ($\frac{1}{4}$") turnings, stitch fabric. Trim the raw edges, turn through. To do this, take a darning needle and some strong thread. Thread the needle and knot the two ends together. Make a small stitch through the turnings at one end of the tie, then pass the needle, eye first, through the centre of the tie. Pull rouleau through and cut off the thread. Do not press.





Turn in the raw edges at one end and slip stitch. Make two or more ties if required.

Place the raw end of each tie to the edge of the garment on the right side and, with the raw edges together, tack.



# Sculpture from natural wood

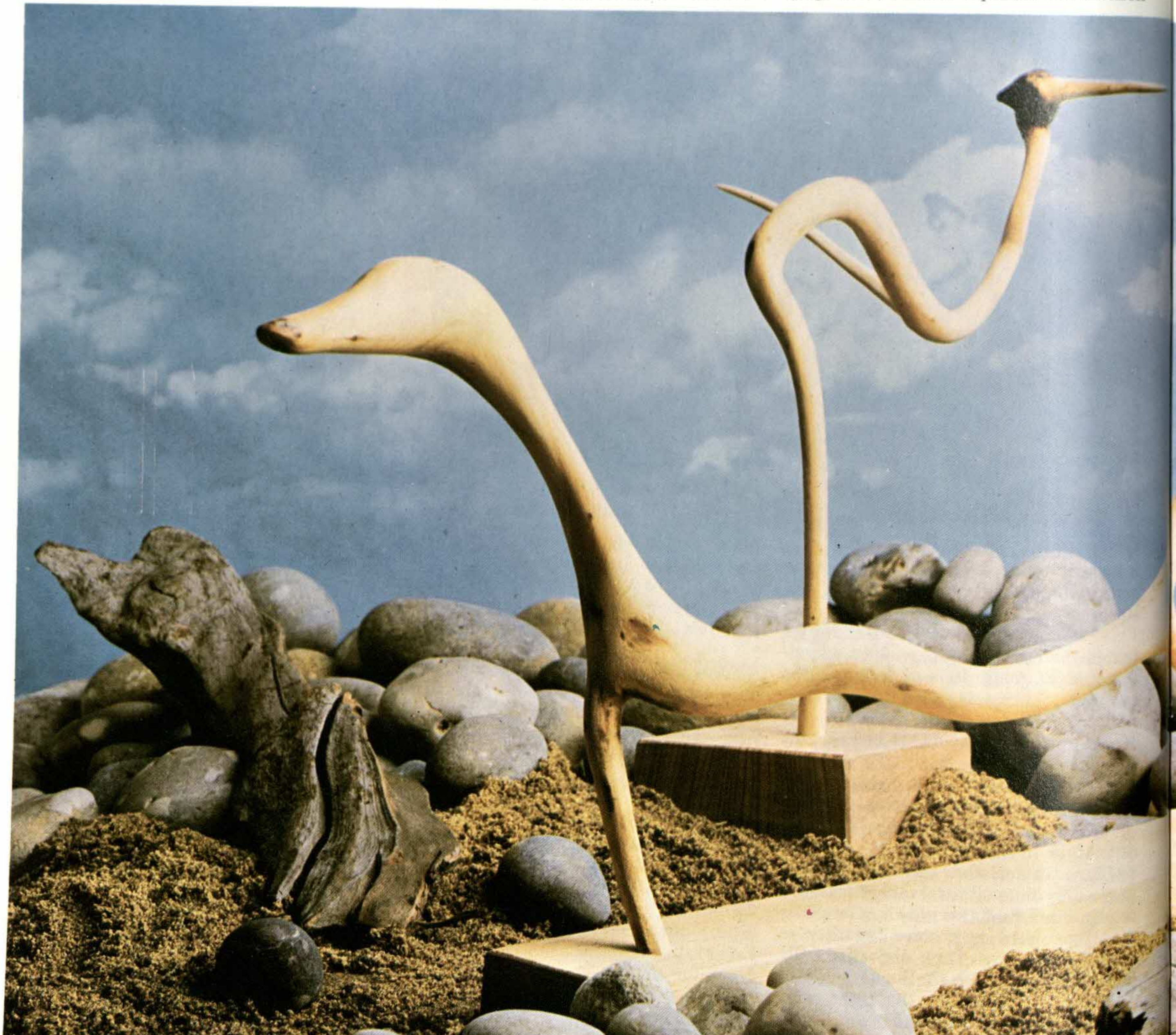
Wood — modelling 7

Wood sculptures can be developed from many natural forms. The source can be roots, driftwood and branches. Probably the most readily available material is timber from windfalls, felled trees and pruned waste from almost any type of tree.

Unlike some sculptural mediums there is no need to do much shaping when working with natural wood shapes. Each piece of material is worked according to whatever its shape suggests. There can be no hard and fast rules and no two pieces will ever be identical. Each bit of wood must be approached on its own merits.

**You will need:**

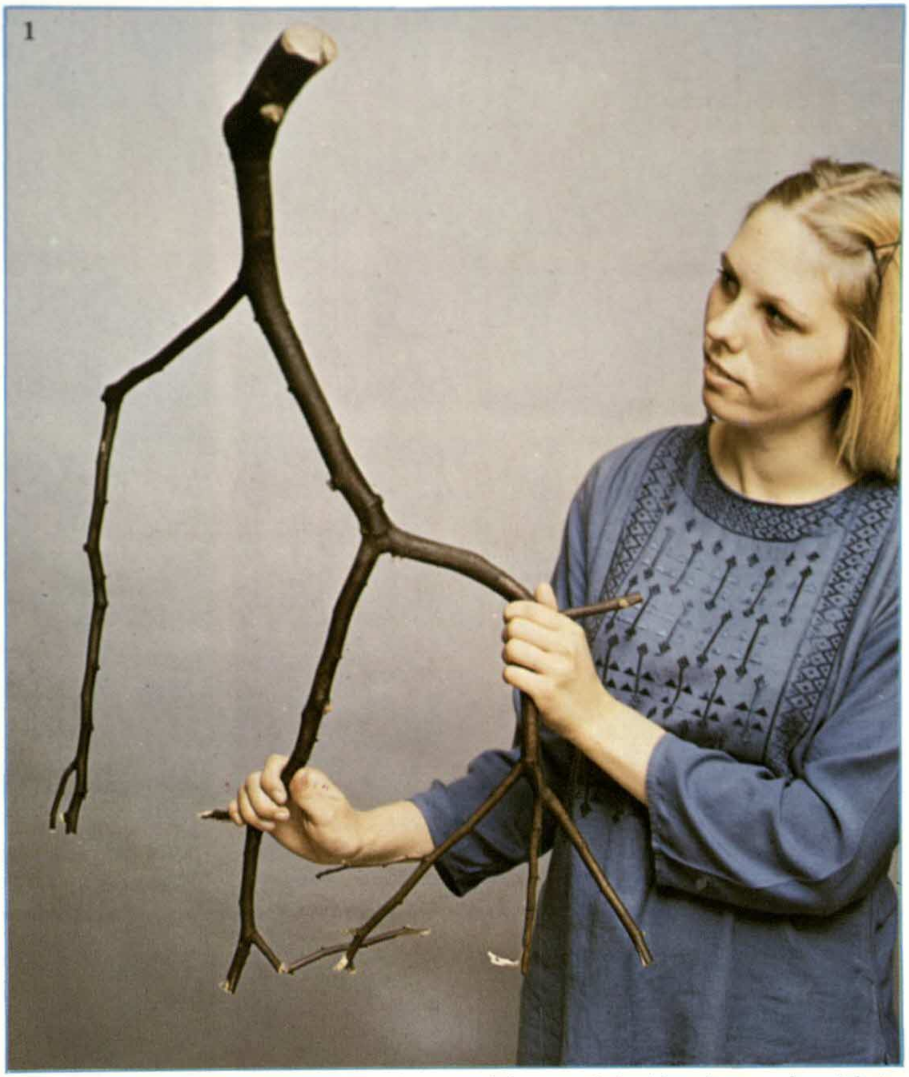
Tools as for Modelling chapter 3, page 1228, and a sharp knife with which



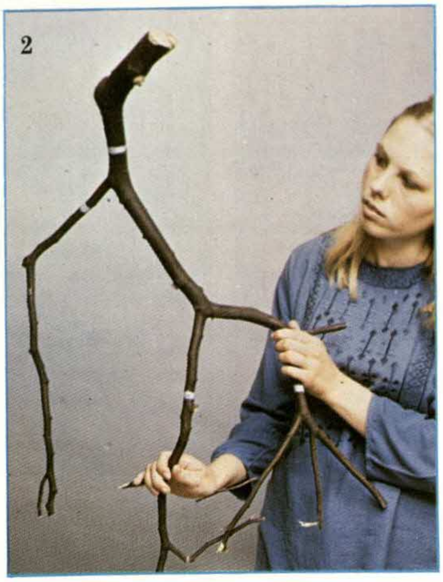
Alan Duns

to remove the bark if it is still present.
Driftwood or branch.
Medium and fine grade glasspaper or similar sandpaper.
Polyurethane varnish—optional.
Block of wood for the base.

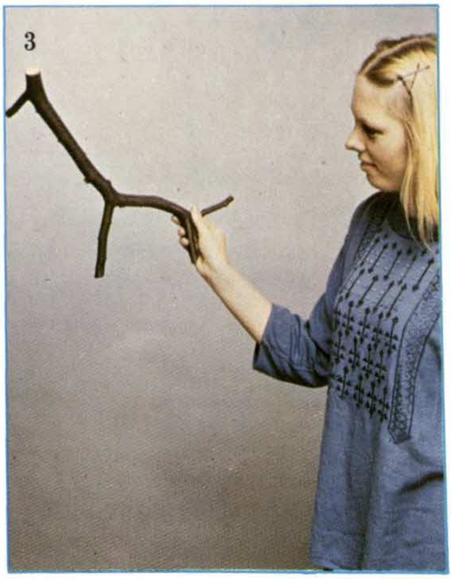
*With imagination, any piece of wood can be transformed into an interesting sculpture. These three-dimensional sculptures of a dachshund and stork were shaped from pieces of driftwood and illustrate how the natural shapes of the wood can be used to determine the sculpture. Designer: John Matthews.*



☐ Hold the selected branch in various positions and decide what to do with it, ie what should be removed and on which end the finished sculpture will rest.

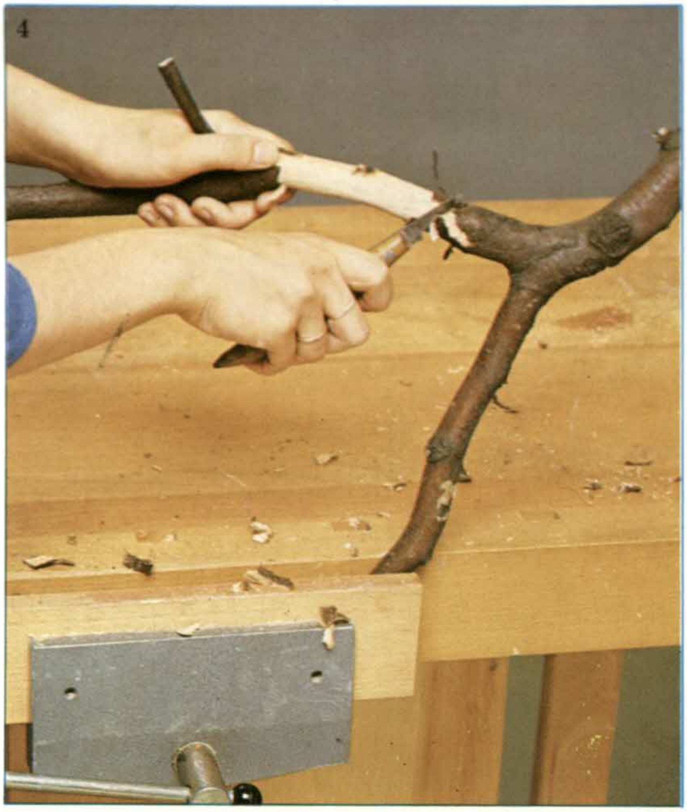


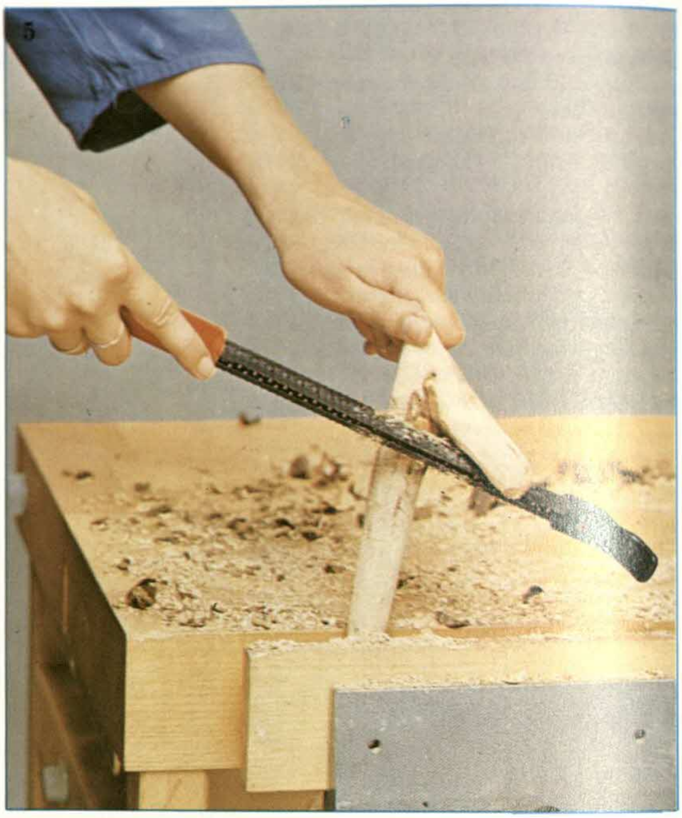
☐ Make chalk marks, or remove bits of the bark where you intend cutting the timber. Take another look to check that the marks are correctly placed.



☐ Cut off all the excess bits so that you are left with the lines you planned, and check again that the proportions are what you want.

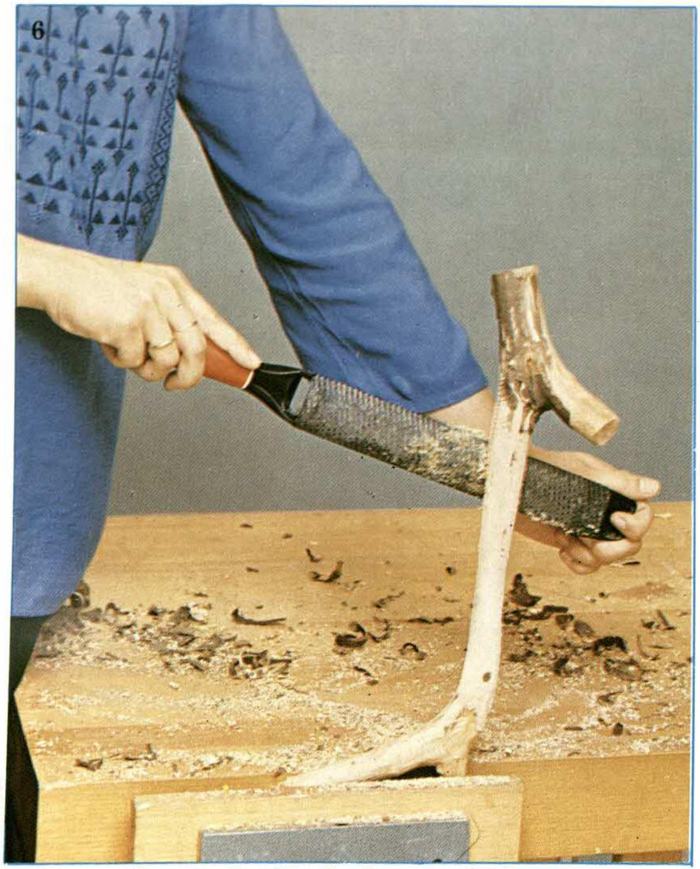
Dick Miller



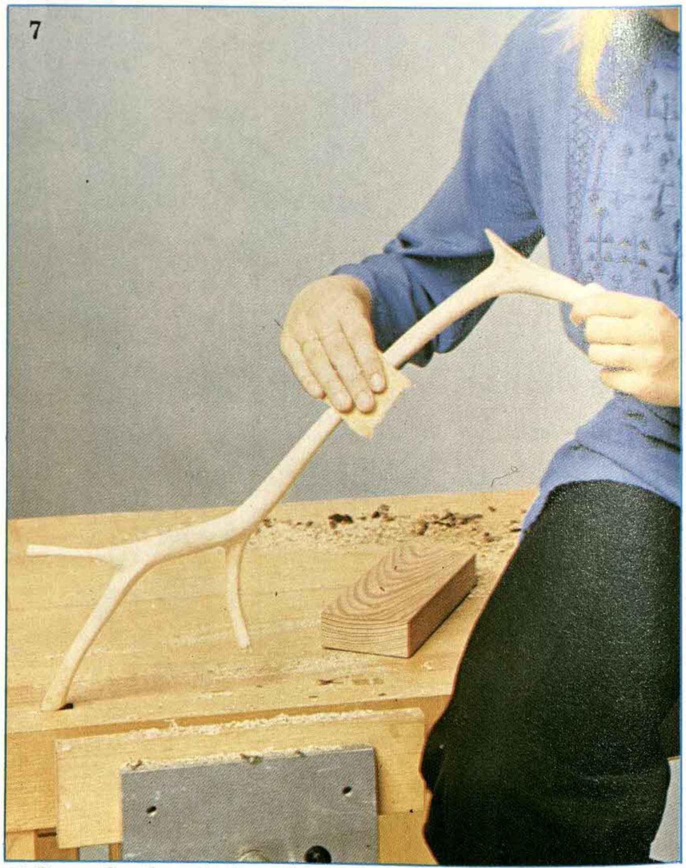


☐ With the knife remove as much of the bark as you wish. Some areas will be more difficult than others but you do not have to remove all of the bark—you might wish to retain some to form part of the sculpture.

☐ Unwanted bark in awkward corners can be removed with the Surform tools, especially the round Surform.

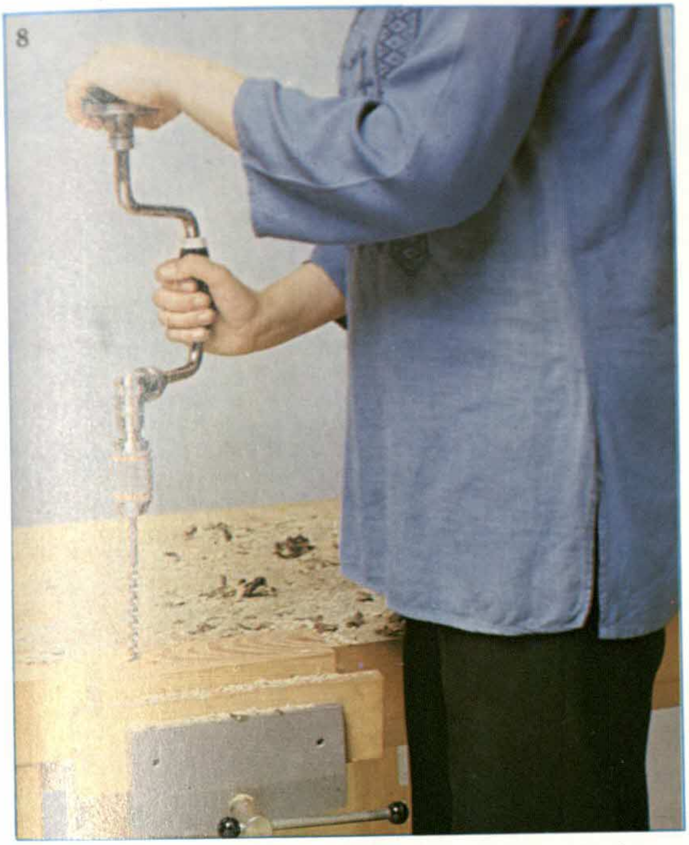


Dick Miller

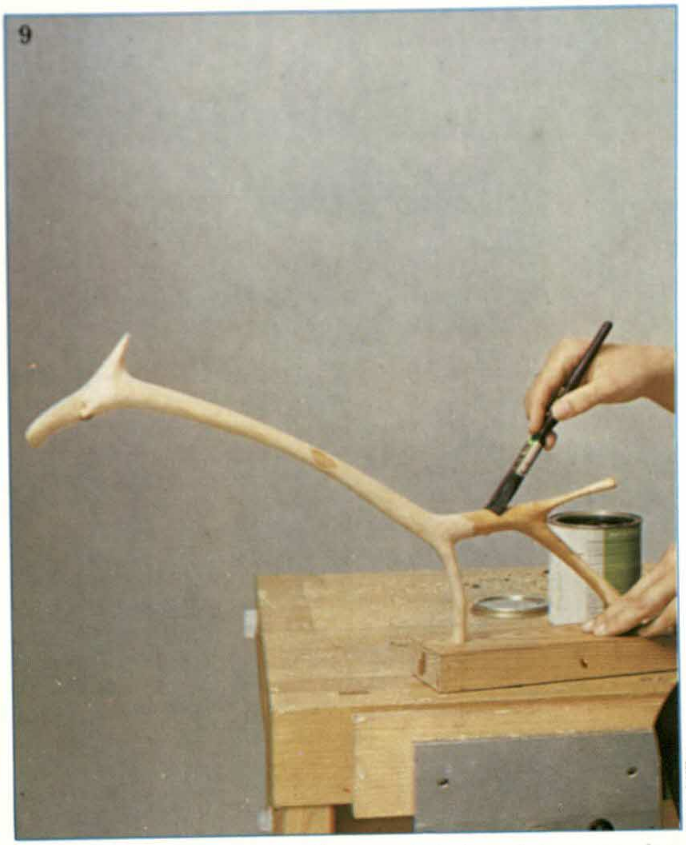


☐ Shape the wood with Surform tools to remove any unwanted features or to obtain a variation of the shape.

☐ Smooth the timber beginning with a medium-grade glasspaper and finishing off with the fine-grade paper.

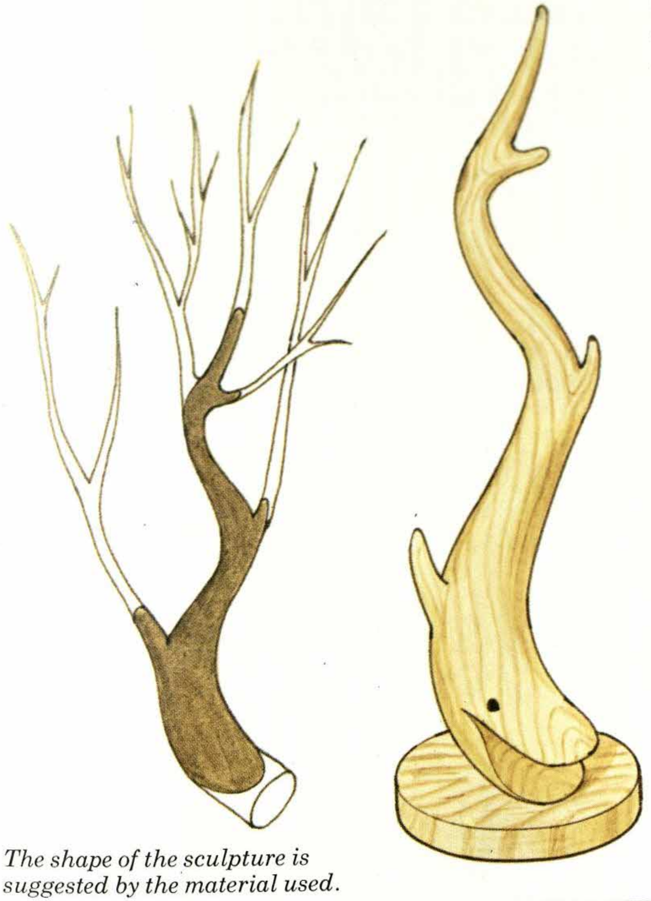


☐ Drill a hole in a piece of wood selected for the base. Insert sculpture and secure with wood filler if necessary.



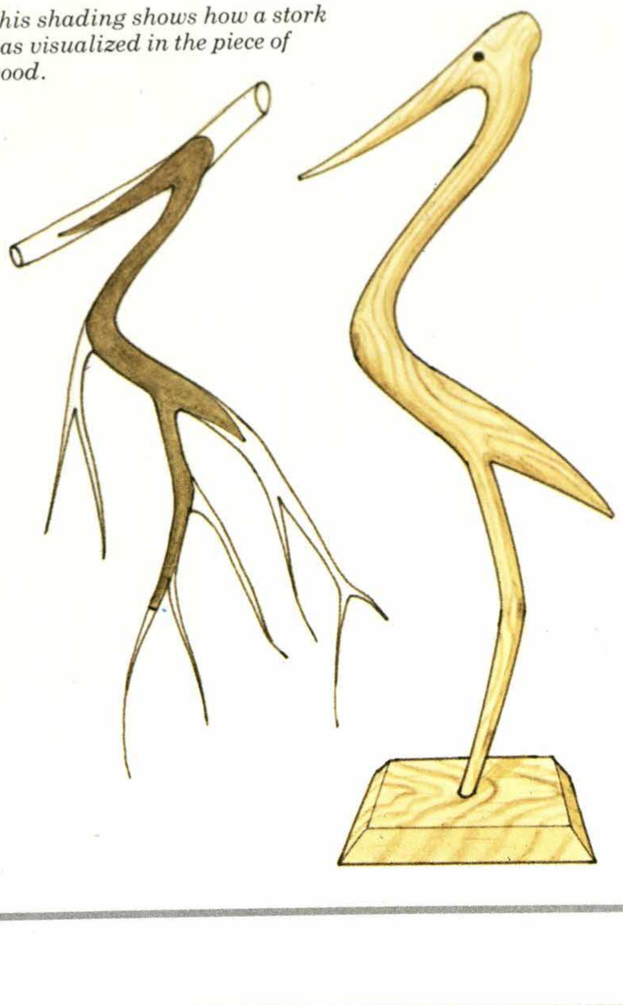
☐ The finish is optional: the completed sculpture can be varnished or left natural if the wood lends itself to this.

Dick Miller



*The shape of the sculpture is suggested by the material used.*

*This shading shows how a stork was visualized in the piece of wood.*



Paul Williams

# Fireside chairs: stripping

Cloth — upholstery 8

Fireside chairs—small easy chairs with wooden open arms—can often be bought very cheaply from a junk shop and they are easy to renovate with foam padding and bring back into use for the sitting room or bedroom.

This chapter describes how to strip off the old upholstery and how to spruce up the frame, and the following chapter describes how to do the new upholstery and the materials required.

**Styles of fireside chair.** Styles of fireside chair vary considerably. With some, the upholstery consists simply of two removable cushions, one for the seat and one for the back. This style is the simplest of all to renovate because you simply replace the springs and foam padding if necessary and re-cover the cushions.

On some styles of chair the padding is upholstered (fixed permanently) on the back and there is a separate removable cushion for the seat. With other styles both the back and seat may be fully upholstered. But with all these, although the style of upholstery and the shape of the back and arms may vary according to design, the basic method of re-upholstery is the same—you may of course have to adapt it to suit your own chair.

**Styles of cover.** There are two main styles for covering the back of a fireside chair. The most common style is where the cover fabric on the inside back is wrapped round the side edges to the outside back of the frame and tacked there. A separate piece of fabric is cut to cover the outside back. This style gives the sides of the chair a rounded appearance and is the method described in detail in the next upholstery chapter.

In the second method, also described in the next upholstery chapter, a piece of fabric is cut to fit the inside back only, and separate pieces—like the welt strips of a box cushion—are joined on to cover the side depth of the padding. These side pieces are tacked to the outside back of the frame as in the first method. This gives the sides of the chair a more square, tailored appearance, particularly if the seams joining the side pieces to the front panel are piped in a plain colour as shown in the photograph.

## Stripping the old upholstery

It is usually easiest to strip off the old upholstery before you buy any new materials so that you can see how the upholstery was constructed, which pieces can be re-used and which will need replacing.

☐ Examine the fabric on the outside back of the chair to see how it is attached—by slip stitching or with tacks or staples. The easiest way to remove slip stitching is to cut through stitches at 30cm (12″) intervals round the edge of the fabric and then pull out the thread between the cuts. Tacks can be removed with a ripping chisel and mallet as described in Upholstery chapter 1, page 416, and staples can be prised up with the sharp point of a regulator or similar instrument.

☐ Strip off the tacks or staples which are holding the fabric covering the inside back of the chair, and remove this and any wadding underneath it.

☐ You will now be able to examine the padding. Check carefully to see if it can be re-used. If it is very compressed and thin or if it is crumbling, strip it off and throw it away.

☐ If the padding is in good condition, leave it in position unless the springing, webbing or hessian underneath it needs replacing—you can check this without moving the padding by looking through the outside back of the frame. If it does need replacing, however, you will have to remove the padding first, in which case the padding may become damaged and have to be replaced too.

**The seat.** Remove the cover fabric from the seat cushion and examine the pad. Re-use it if it is in good condition and comfortable. You can throw away anything else. Check the springing under the seat cushion.

**The springing.** Most fireside chairs have either tension springs (narrow, tightly coiled springs which span the frame and clip into a metal strip on each side) or rubber webbing. These may also be used on the back of the chair. If the chair has rubber webbing which has become frayed at the edges or torn, the affected strands should be replaced. With tension springs, the springs themselves may be sound but the holes in the metal strips into which the springs are clipped may be worn. These can usually be re-drilled and it may not be necessary to replace the strips unless they are badly damaged. Both the strips and springs, if these also need replacing, are obtainable from an upholsterer's supplier. Alternatively you can remove the springs and metal strips completely and substitute rubber webbing.

## Preparing the frame

Examine the frame carefully for woodworm and apply treatment fluid if necessary. Allow two or three days for this to dry before starting the new upholstery.

If any of the joints on the frame are loose, scrape out as much of the old glue as possible and squeeze some new woodworking glue into the crack. Clamp the joint together until dry. For additional strength on parts of the frame which will not show you can cut a piece of 3mm ($\frac{1}{8}''$) thick plywood to fit over the joint, smear one side with adhesive and place it over the joint. Attach it with a 2.5cm (1″) nail in each corner.

If the chair had rubber webbing which had become frayed at the edges, it is probably because it was chafing against the frame. Cure this before replacing the webbing by rubbing down edges of the frame where the strands touch it, using a metal file.

**Sprucing up the show-wood.** This should also be done at this stage. The simplest way of removing old varnish is with a proprietary paint stripper, following the manufacturer's instructions. French polish can be removed with methylated spirit which is wiped on generously and left for a few minutes until the polish is softened. Remove with a scraper and then with a fine wire wool pad moistened with more methylated spirit. Leave to dry and then go over the wood with fine sandpaper.

Holes and cracks in the show-wood can be filled with plastic wood in the appropriate colour or—if you are staining or painting the wood—with dutch putty. This is made by diluting cellulose filler with emulsion paint to make a consistency which can be pushed into the holes. Sand smooth when dry. The show-wood can now be stained, varnished or painted. Make sure it is completely dry before starting the new upholstery.

*Inset: here is a typical example of the kind of drab fireside chair which can be bought cheaply from a junk shop. It has been given a new lease of life with a painted frame, new padding and a bright covering fabric. The chair was stripped as described here and then upholstered with piped welts as described in the next chapter.*

Melvin Grey

Kim Sayer

# Ergonomics: proportions for tables

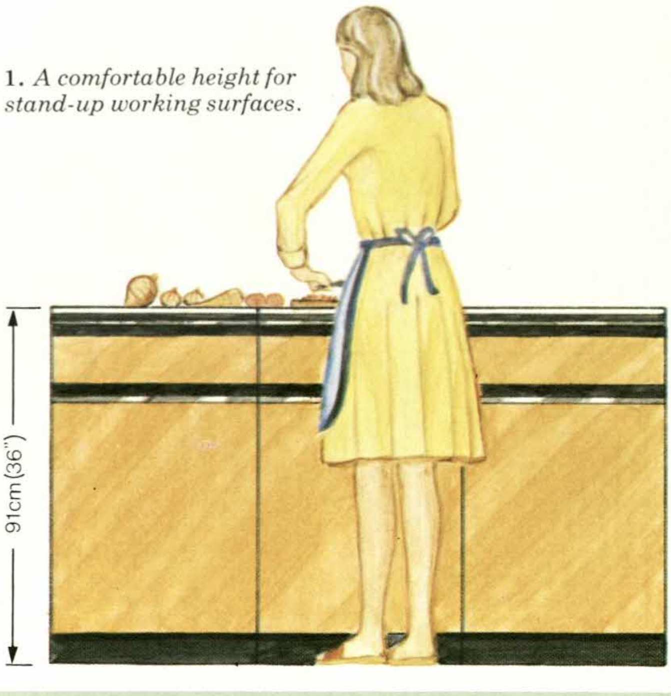
In this chapter the correct heights for tables and working surfaces are illustrated. As with the chairs in the previous chapter, the heights of the different surfaces given here have been worked out scientifically using the measurements of the human body, and are designed to produce the most comfortable and useful height.

The stand-up working surface (fig.1) is 91cm (36″) high and is the standard height for kitchen cabinets and cookers. A work bench or any surface to be used while standing rather than sitting will be comfortable to use at this height.

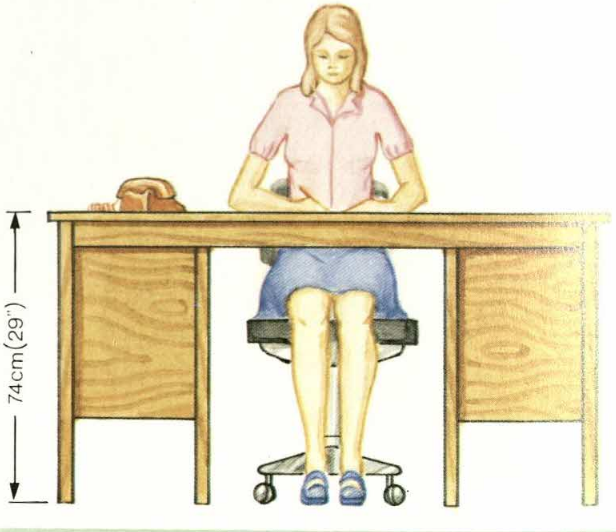
The table in fig.2 is 74cm (29″) high and the most comfortable height for a dining table, or desk, while the table in fig.3, which is considerably lower, is a suitable height for eating informal suppers or brunches while sitting in armchairs.

The table in fig.4 is the right height for holding ashtrays and coffee cups while relaxing in easy chairs.

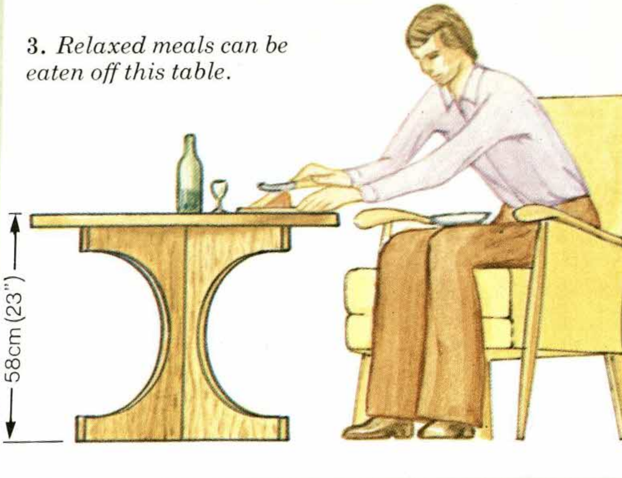
**When making a piece of furniture** use the heights given here to achieve the most comfortable table or working surface. However, if you are making a table to go with a set of chairs you already have, make sure that the height of your surface will suit the height of your chairs. A dining table which is 74cm (29″) high will obviously be too low for chairs which are 63cm (25″) high, but if used in conjunction with the chair heights given in the previous chapter, these heights will be comfortable.



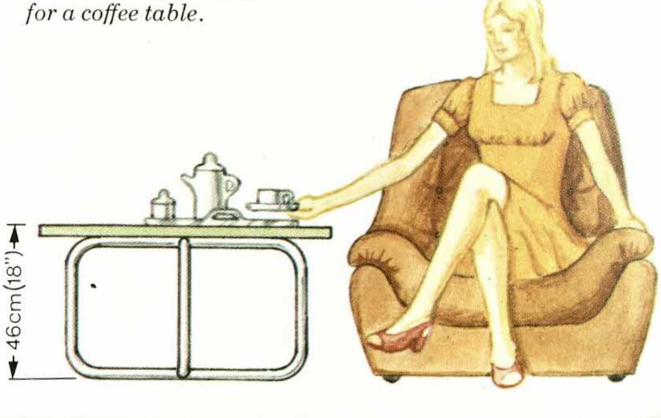
1. *A comfortable height for stand-up working surfaces.*



2. *Desks and dining tables should be this height.*

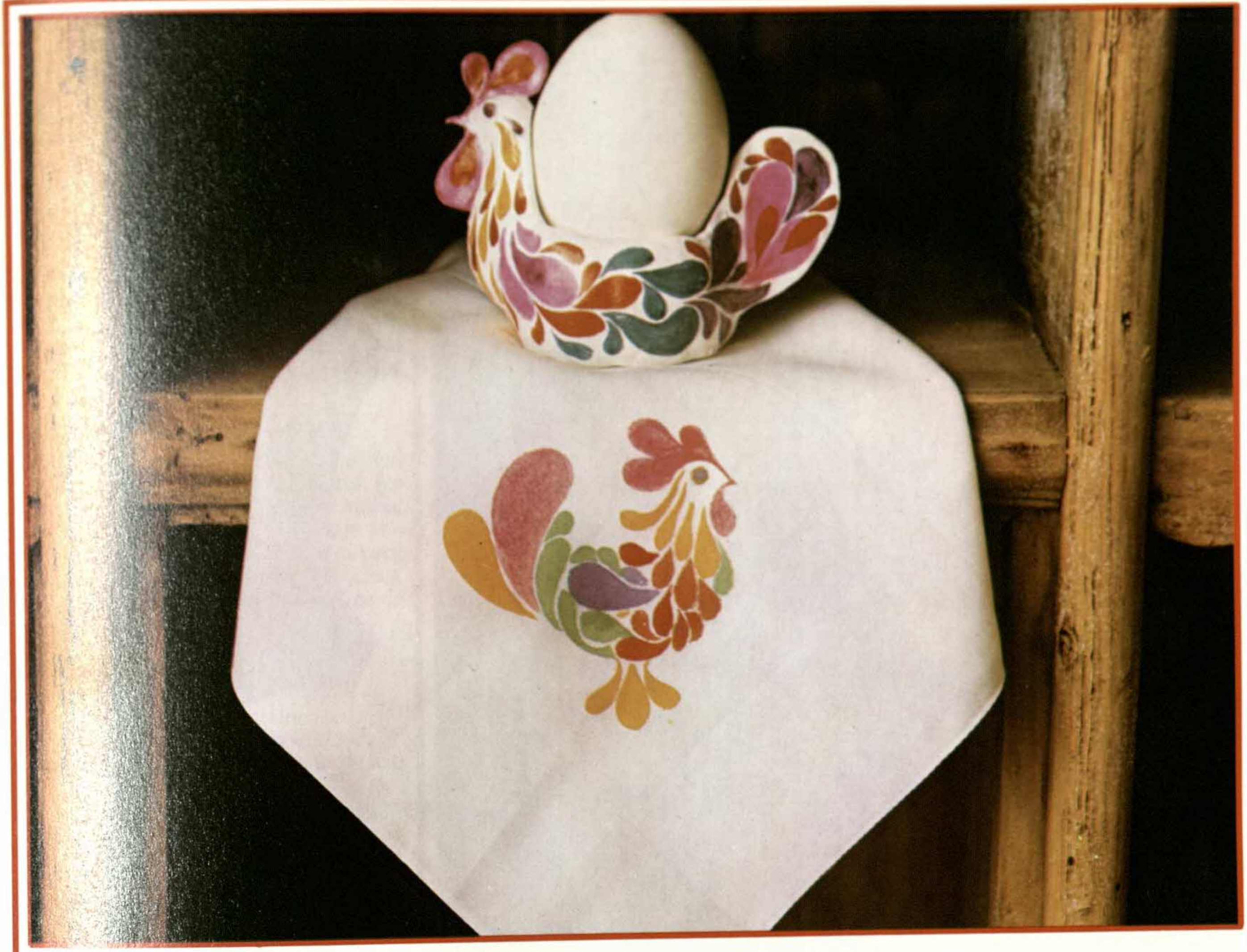


3. *Relaxed meals can be eaten off this table.*



4. *This is a good height for a coffee table.*

Paul Williams



Camera Press

# Creative ideas 61

**Hen-shaped egg-cup and matching napkin**

Whether you have already turned your hand to modelling with self-hardening clay or not, this egg-cup is an easy and absorbing thing to make.

**You will need:**

Cardboard cylinder or egg box.

Self-hardening clay, such as Newclay.

Clay hardener, such as Newclay hardener H1.

Polyurethane or emulsion paints and paintbrushes.

Take your cardboard roll and cut off a length about the size of a napkin ring. Alternatively, if using an egg box, cut round one egg shape.

Gradually model a rotund shape around the ring, with strips or coils of clay. (For information on using self-hardening clay see Clay chapter 1, page 4 and Clay chapter 4, page 146.)

Now model the hen's head and tail on to the body—smearing the joints together with each new piece of clay. Flatten a piece of clay and shape head. (You may find it easier to add the details on the head separately.)

Similarly, with a disc of clay model the tail.

Leave to dry thoroughly.

Remove cardboard shape and then apply one or two washes of hardener to strengthen the model. Paint hen.

Note: although your egg-cup is durable, it should not be 'soaked' in your washing-up water.

**For the matching napkin you will need:**

Plain napkin in natural fibre.

Graph paper.

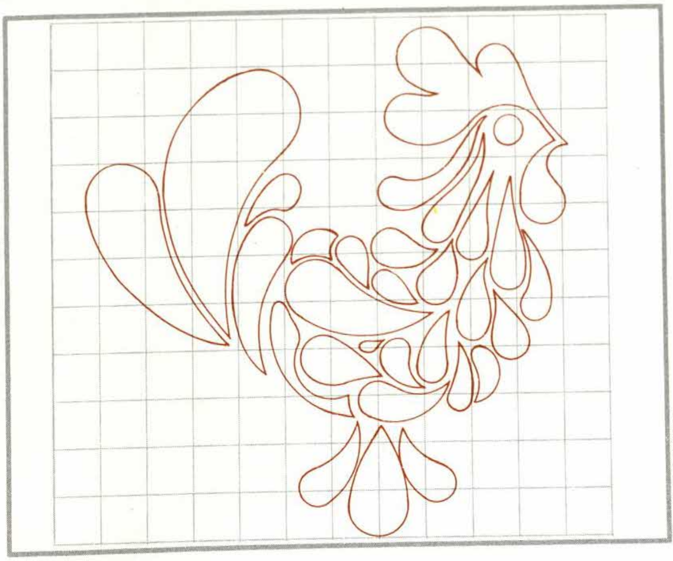
Tracing paper.

Cold water dyes and dye-thickening agent, such as Paintex.

Stiff paintbrush.

Simply trace the motif given on to your napkin, enlarging it to a suitable size.

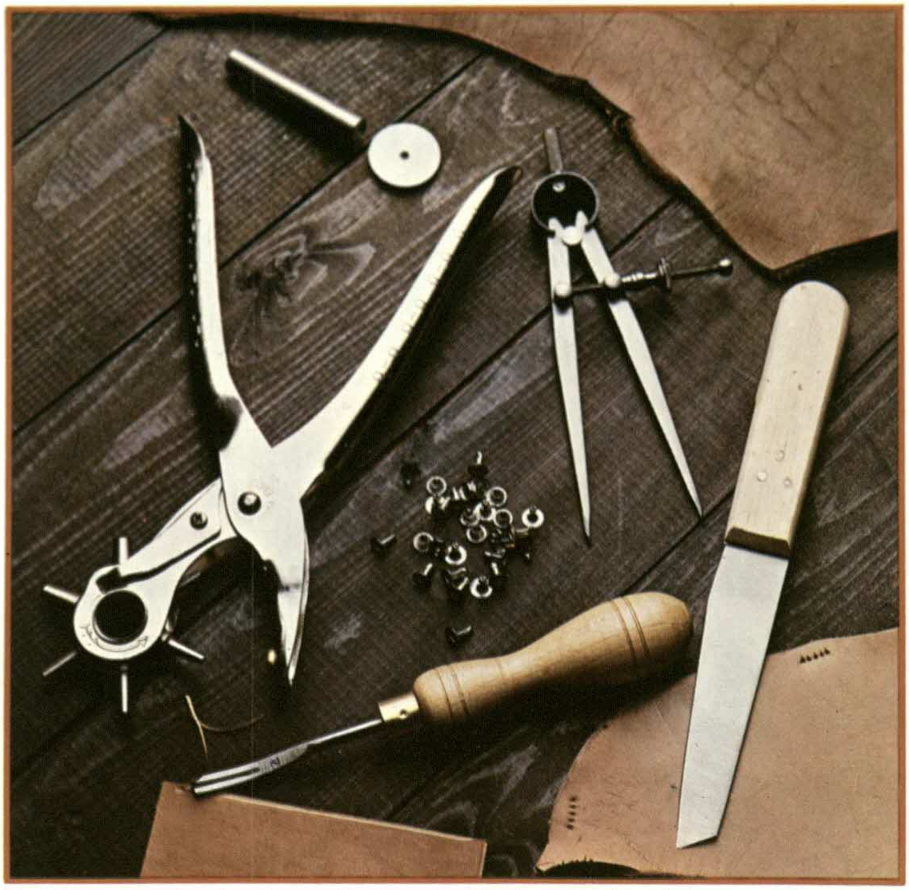
Mix the dye with the thickening agent, following the manufacturer's instructions. To complete, paint on the dye with a stiff brush.



Trevor Lawrence

*Trace off the details of this motif for a lifelike hen.*

# Starting to work with thick leather



*Revolving punch, edge shave, dividers, knife, rivet punch and rivets.*

Paul Kemp

Thick leather or hide comes from large animals such as cows, oxen, horses and camels. The thickest types are used for footwear and the thinner varieties for lighter leather goods such as bags and belts. In the chapters on working with thick leather you will find out how to braid, thong and stitch hide to make a variety of objects including belts, a bag, and a picture frame.

## Buying leather

Although the word 'hide' covers many types and qualities of leather, the most usual type of hide, and the one used in this chapter, is cow-hide.

**Cow-hide** is sold by leather suppliers and some craft shops. It comes in many thicknesses (usually measured in millimetres) so choose a suitable thickness according to what you want to make. It is sold by weight, so the thicker the leather, the more expensive it will be.

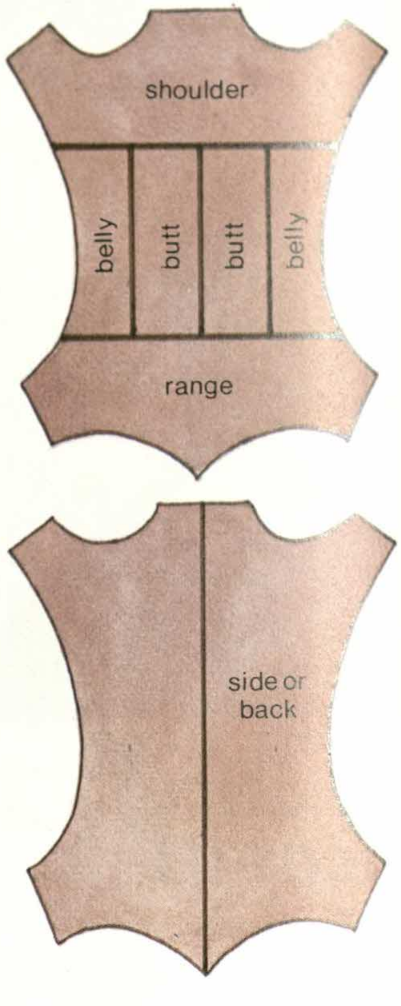
When starting to work with cow-hide it is better to stick to the thinner types —about 2mm ($\frac{1}{16}$″) thick. Experienced leather workers can handle thicknesses of up to 6mm ($\frac{1}{4}$″).

The top of the leather is called the grain side, and the underside, which looks rather like suede, is called the flesh side.

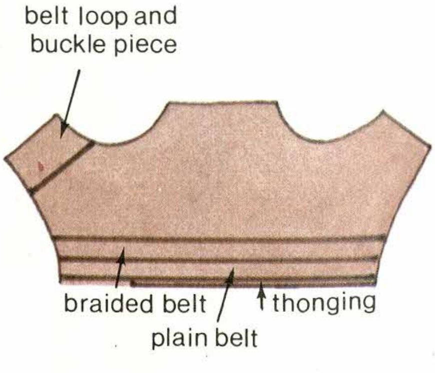
Sometimes cow-hide is split into several layers to make a number of thin skins out of one thick skin. These 'splits' as they are called are used for lighter leather work, for example for gusset or lining leather. The top split will have the natural grain on one side and is the best to buy. The other splits will look like the flesh side on both sides, and are sometimes printed with a false grain by the tannery.

Cow-hide can be vegetable tanned using natural tannin from tree bark which turns the leather a tan or brown colour; or it is chrome tanned using chromium salts and then dyed to any colour. Vegetable tanned hide usually wears better than chrome tanned—the vegetable tanned chestnut hide used in this chapter actually improves with age, wearing to a rich brown.

Cow-hide can be bought in different cuts coming from different parts of the body (fig.1). The butt is the prime cut



1. *The location and names of the different cuts of cow-hide.*



2. *Position pieces as shown here.*

Barbara Firth

of the hide and is used for top quality leather work. For longer pieces of leather a back or side is used. The shoulder is ideal for general leather work and is used in this chapter to make two belts. Cow-hide is usually sold in large pieces, but offcuts are sometimes available.

Make sure that the piece of hide you buy is firm and well greased so that it will not crack when you start to work with it. Also look out for scars on the surface of the leather and see that the leather is the same thickness throughout. This is particularly important if you want a long piece for a belt, for example.

## The plain belt

This is a very simple belt pattern which introduces some basic techniques for working with thick leather including cutting, punching and riveting the leather. The width of the belt can vary according to the size of buckle you buy. Cut the belt width equal to the inside width of the buckle.

**You will need:**

**Tools**

Steel rule at least 60cm (2′) long.

A very sharp knife for cutting the leather—special knives are sold for cutting leather, but a Stanley knife will do. If you intend to do much leatherwork it would be worth buying a proper knife for cutting leather. These and all leather-working tools mentioned here can be bought in leather tool shops and some craft shops.

A pair of dividers with adjustable screw for scoring lines on the leather.

A revolving leather punch for punching holes for the buckle and rivets.

Hammer and rivet punch.

Medium grade glasspaper or edge shave for smoothing cut edges.

**Materials**

Three rivets 6mm ($\frac{1}{4}$″) diameter.

Buckle.

Piece of chestnut cow-hide 2mm ($\frac{1}{16}$″) thick: you can buy a piece large enough to take the two pieces or you could buy a shoulder from which you will be able to make all the objects featured in this and the next two chapters.

For the belt you will need two pieces: one piece the width of your buckle, and the length of your waist measurement plus 20cm (8″), and one scrap 1.25cm ($\frac{1}{2}$″) wide and as long as three times the width of the belt. If you buy the shoulder, follow instructions on how to position the belt pieces in fig.2.

Sponge or rag for applying glue.

Scotch glue—this comes in small pellets which are dissolved in hot water.

Rag for polishing.

Sandra Lousada

*These two belts are ideal for wearing with denim. Designs by David Boot.*

☐ Find a firm hard surface to work on and lay out tools and materials.

**Cutting.** Cow-hide can be cut with a sharp knife or leather scissors. In this chapter, a sharp knife is used. A line is scored on the grain side of the leather with one point of a pair of dividers or the point of a knife. The knife is then run over the scored line several times until the leather is cut through. For cutting straight lines the knife is held against a steel rule.

☐ If you are working from a shoulder you will have to straighten the bottom edge of the piece. To do this lay the steel rule along the bottom edge of the shoulder and score a line with the knife.

☐ Keep on running the blade over the scored line against the steel rule until you have cut through the leather. Do not force the blade through the leather; cut gradually.

☐ Set the dividers to the required width for the belt, ie the inside width of the buckle.

☐ Run one point of the dividers along the cut edge, scoring a line parallel to the cut edge with the other point.

☐ Cut along the scored line using the sharp knife and steel rule as before.

☐ Cut the strip of leather to the required length: your waist measurement plus 20cm (8″).

☐ Round off one end of the belt by setting dividers to the width of the belt and scoring two lines on the grain side as shown in fig.3. Put one point of the dividers on point A and score an arc, then put one point of the dividers on point B, exactly opposite A, and score another arc.

☐ Cut along the scored lines with a sharp knife.

☐ Run the edge shave along the edges of the belt to trim off the sharp corners. This can also be done by rubbing with medium grade glasspaper.

**Sealing the edges.** The cut edges of the leather will be rough and fluffy and must be sealed. Sometimes the edges are stained to the colour of the leather and this process is explained in a later chapter—in this chapter they are given a transparent finish.

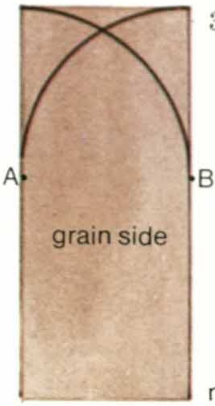
☐ Mix 2 teaspoons of Scotch glue in 6 teaspoons of boiling water and stir until the glue has dissolved.

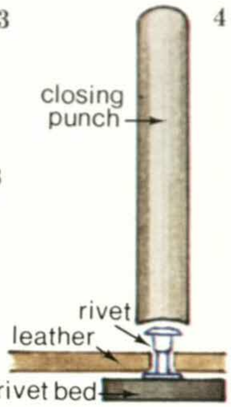
☐ Dip the sponge or rag into the mixture while it is still hot and rub along the cut edges of the leather.

☐ When dry, rub the edges with a cloth to give a shine.

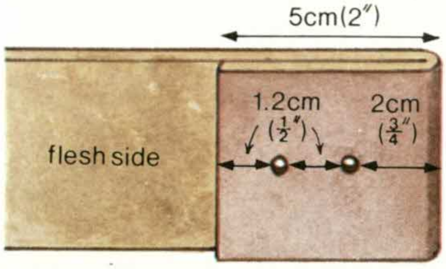
**Attaching the buckle.** Buckles can be sewn, thonged or riveted on to belts. For this belt, rivets are used to attach the buckle.

Rivets come in two halves. A hole is punched in the leather where each half of the rivet is to go, one half of the rivet is put into the top of the hole, and the other half of the rivet into the other side of the hole. The rivet is then fixed into a rivet punch. The rivet punch has two parts. One part, the bed, is placed underneath the rivet and the other half, the closing punch, is placed on the top of the rivet and the end hit with a hammer. This secures the two halves of the rivet (fig.4).

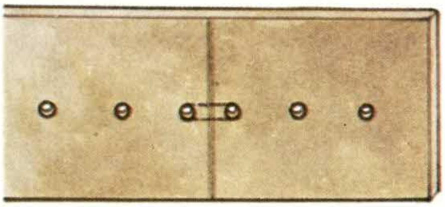




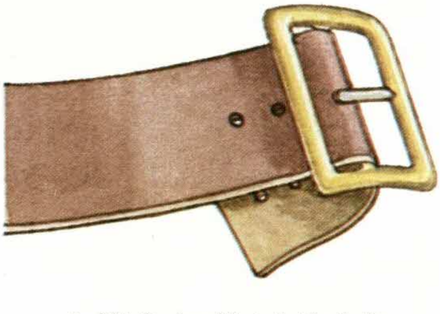
3. *Scored lines for rounded end.*
4. *Rivet assembled for securing.*



5. *Punch these holes for the rivets.*



6. *Cut out slot for buckle tongue.*



7. *Fit the buckle into the belt.*

8. *Belt loop secured with a rivet.*

☐ Draw a line on the flesh side across the width of the belt, 5cm (2″) from the straight cut end of the belt.

☐ Fold 5cm (2″) of the straight cut end of the belt, ie along the line, flesh sides together.

☐ Using a revolving leather punch, punch two holes 3mm (⅛″) diameter through the double thickness of leather for the rivets (fig.5). When punching holes in leather with a rivet punch, always put the cutting side of the punch in the side that will show so that the edges of the hole will curve inwards. Give the punch a little twist before removing it to make sure it has cut right through the leather.

☐ To make a slot for the tongue of the belt, open out folded piece and punch one hole either side of the fold line, 3mm (⅛″) away from it.

☐ Cut out the leather between these two holes (fig.6).

☐ Fit the buckle into the belt making sure it is the right way round (fig.7).

☐ Fold back 5cm (2″) of the belt, flesh sides together, so that the punched holes correspond.

☐ Fit rivets into the two holes and secure with the rivet punch.

**Fastening holes.** These should be punched in the middle of the width of the belt, and should be large enough to take the buckle tongue. The distance between the holes should usually be equal to the width of the belt. Always punch one hole in the right place for your waist (or hips if the belt is to be worn on the hips) and measure the other holes from this point.

☐ Measure your waist measurement from the buckle along the belt and punch one hole with the revolving punch at the required point.

☐ Set the dividers to the width of the belt, mark out the positions for two holes on either side of the first hole and punch the holes.

**The belt loop.** This is to hold in place the end that goes through the buckle (fig.8).

Cut a piece of leather 1.25cm (½″) wide with length equal to three times the width of the belt.

☐ Seal and polish the edges.

☐ Fold the piece of leather into three, grain side outermost.

☐ Check that the loop is big enough to take the double thickness of the belt.

☐ Punch a hole in the double thickness, ie the back of the loop, fit in rivet and secure with rivet punch.

☐ Slot the loop on to the belt.

## Braided belt

This belt is made by braiding five strands of leather. If you are cutting your pieces from the shoulder of cow-hide used to make the plain belt, use the straight edge already cut on the shoulder for one edge of the braided belt.

**You will need:**

Tools as for the plain belt plus a G-clamp and bulldog clip.

**Materials**

Buckle at least 2.5cm (1") wide.

Three pieces of chestnut cow-hide all 2mm ($\frac{1}{16}$") thick: one belt length at least 30cm (12") longer than your waist measurement and as wide as your buckle—as the piece is to be cut into five strips, it should not be narrower than 2.5cm (1"); one piece 13cm (5") long, the same width as the belt—this will be used to attach the buckle to the belt; one strip of thonging, 40cm (16") long, 3mm (⅛") wide.

Leather glue such as that supplied by Evo-Stik.

☐ Cut out the pieces of cow-hide. If you are working from the previously used shoulder, follow instructions in fig.2.

☐ Round off one end of the belt length as for the plain belt.

☐ Trim, seal and polish edges of the rounded end of the belt, down to where the braiding is to start, ie 17cm (6½") from the end.

☐ Divide the width of the belt into five equal widths and set the dividers to this width.

☐ Starting 17cm (6½") from the rounded end score four parallel lines along the length of the belt, dividing the belt into five equal strips (fig.9). Score the first line by running one point of the dividers along the cut edge of the belt and scoring with the other point. Score the second line by running one point along the scored line and scoring with the other point.

☐ Repeat this for the next two score lines.

☐ Using the sharp knife and steel rule, cut along the four scored lines to make five strips of leather.

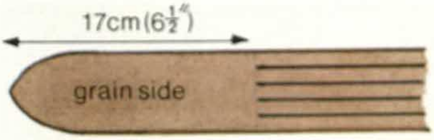
☐ Secure the rounded end of the leather in a G-clamp and start to braid. Work from alternate sides to the middle: take strip 1 over 2 and under 3, then strip 5 over 4 and under 1 and so on (fig.10).

☐ When you have finished braiding, secure the ends in a bulldog clip.

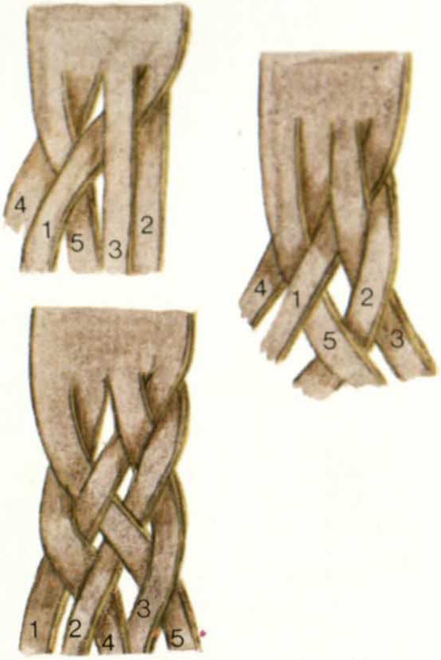
☐ Punch three fastening holes along the unbraided end of the belt for the tongue of the buckle.

☐ Measure your waist measurement from the centre fastening hole down the belt and cut off excess braiding.

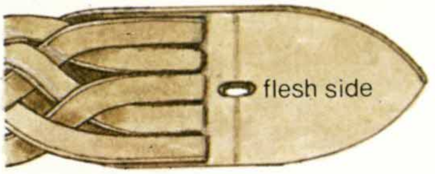
☐ Unbraid about 4cm (1½") at the end of the belt and trim the ends if they are not even.



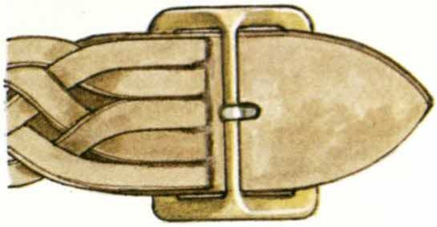
**9.** *Leave part of the belt unbraided.*



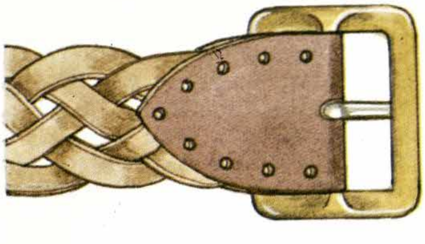
**10.** *Start to braid belt as shown here.*



**11.** *Stick end of belt on to buckle piece.*



**12.** *Fit buckle into buckle piece.*



**13.** *Fold buckle piece, punch holes.*

☐ Secure the end in a bulldog clip.

**To secure buckle.** The buckle is fitted into the leather buckle piece which is attached to the braided end of the belt.

☐ Round off both ends of the buckle piece as for the belt end.

☐ Seal and polish the edges.

☐ Fold the buckle piece in half and mark the fold line on the flesh side.

☐ Make a slot for the buckle tongue across the fold line, as for the plain belt, see fig.6.

☐ Set the dividers to 6mm (¼") and score a line on the grain side all the way round the buckle piece, 6mm (¼") in from the edge.

☐ Take the braided end of the belt out of the bulldog clip.

☐ Using leather glue, glue the buckle piece on to the end of the belt (fig.11).

☐ When dry, fit the buckle into the buckle piece (fig.12), and fold the buckle piece in half, ie along the line.

☐ Punch holes of about 3mm (⅛") diameter at regular intervals, about 1.25cm (½") apart, along the scored line on the buckle piece. These holes should go right through both sides of the buckle piece and through the braided belt (fig.13).

The buckle piece is now thonged on to the belt.

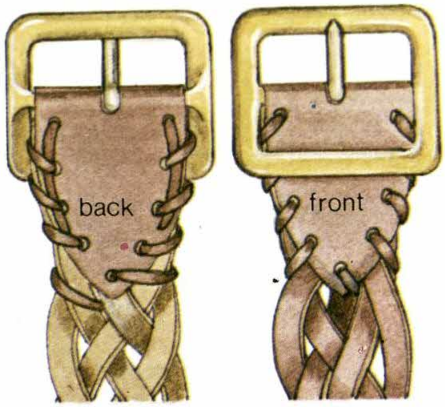
**Thonging** is a method of sewing leather using thin strips of leather woven in and out of punched holes, see leather chapter 1, page 133. Thonging is used on the braided belt to attach the buckle piece to the belt. See the next leather chapter for more on thonging with cow-hide.

☐ Take the piece of thonging and cut one end to a point.

☐ Following fig.14, thread thonging in and out of punched holes keeping the grain side outermost all the time. Pass the centre thong through the middle of the braided belt.

☐ When you get to the last three laces leave them loose, pass the end of the thonging back through the three laces and pull tight.

☐ Trim off the end of the thonging and the belt is complete.



**14.** *Thong buckle piece on to belt.*

Barbara Firth

# Bookbinding – making the case

Bookbinding, the art of protecting and decorating books, is considerably older than that of printing. It dates back about 2000 years to when people began to write on separate sheets of paper, rather than on scrolls, and needed to fix the sheets together and protect them with a cover. The ancestor of today's book is the Roman codex, which was written in script and bound with cord between two pieces of wood. By the 16th century bookbinding had evolved into a specialized craft, and books were usually bound with leather which was often decorated with gold and jewels.

Today, machines are used to bind books which are inexpensive and suited to the rapid pace of our lives. However, they are less durable than those bound by hand, and certainly less beautiful. Hand binding is now reserved for special books that we wish to treasure. It can be done at home quite easily, since few special tools are necessary.

The simplest form of bookbinding involves putting a new cover, called a 'case', on an existing book from which the old covers have been removed. This process—called case-binding—is described here and can be used to re-cover tattered paperbacks, old hardbacks or to turn a new book into something special, perhaps for a gift. Case-bound books can be full bound, half bound or quarter bound, according to personal taste.

The technique of section sewing, the other important part of the bookbinder's craft, is fully explained in a later chapter.

## Tools

All the necessary tools for case binding are obtainable from bookbinders' suppliers and most from ironmongers, art shops and stationers.

**Glue brush.** Either use a bookbinder's glue brush or a 5cm (2″) paintbrush. Choose a brush with a plastic ferrule, if possible, and clean it after use.

**Bone folder.** This is a smooth, knife-shaped tool made of plastic, wood or bone, used at many stages in bookbinding, to crease folds smoothly and to burnish. A paper-knife with a rounded end can be used instead.

**Knife.** Used for precise cutting of paper and cover boards. A shoemaker's knife is excellent for this but whatever type of knife you use, it should have a blade at least 10cm (4″) long and a wooden handle.

**Steel ruler.** These are usually sold with a guard for the fingers, and are essential for accurate cutting.

**Steel set square** with angles of 90°, 45° and 45°. Used to ensure that all corners are cut accurately.

**Scissors or scalpel.** The scissors should be strong with long blades, about 20cm (8″).

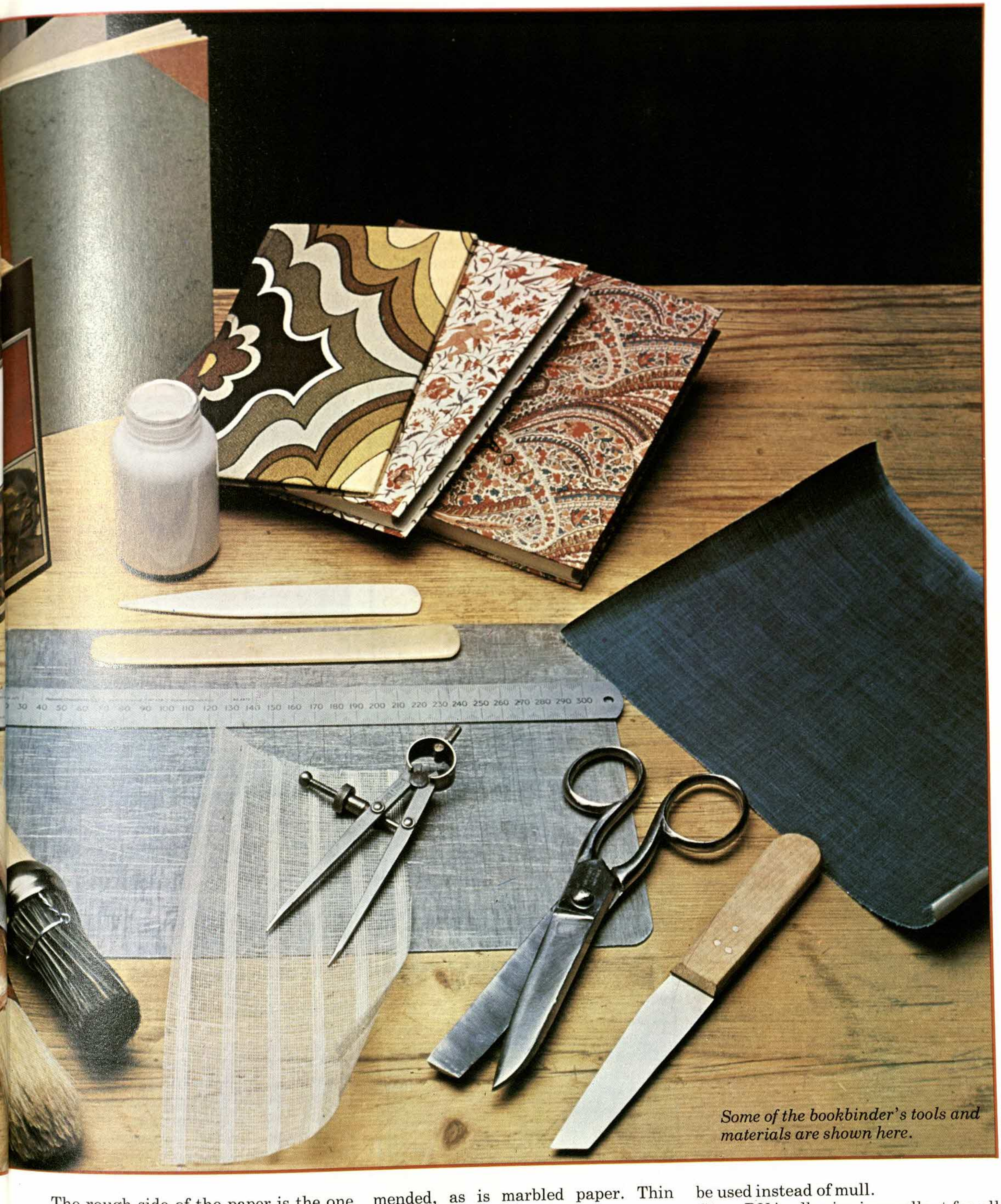
## Materials

There is a wide choice of materials which can be used in bookbinding and it is important to use the correct ones for the particular book being bound.

**Binder's board.** This is an essential material and is covered with bookcloth to form the book's cover. There are many grades of binder's board: strawboard is a reasonable quality for beginners. Select the weight of the strawboard according to the size and weight of the book, but if the correct weight is unobtainable, use an overheavy board rather than one which is too light. An approximate guide is as follows: for paperbacks use 500gsm (grams per square metre) (8oz) to 1,000gsm (1lb) board; for medium-weight books use 1,000 gsm (1lb) to 1,400 gsm ($1\frac{1}{2}$lb) and for large books use 1,700 gsm (2lb) board.

**Bookcloth** is the name given to any material used on binder's board to make the cover. The specialist materials are cloth or paper which have been reinforced with glue. Elephant Hide, Linson and Fabroleen are common trade names. Light, closely woven fabrics can be used also but thick fabrics should be avoided as they are difficult to fold. Loosely woven cloth tends to fray and allows the glue to penetrate it. You can also cover books with strong paper. Hand-made paper, the subject of a later chapter, is especially good for this, as is marbled paper. Thin leather can also be used but is not advisable for the beginner.

**End-papers** are the protective sheets at the front and back of the book. One half of each sheet is glued to the cover board and the other half is lightly attached, 'tipped on', to the book itself. Use a paper which is neither too flimsy to adhere properly to the book, nor too thick to look neat, and with one rough and one smooth surface.



*Some of the bookbinder's tools and materials are shown here.*

Paul Kemp

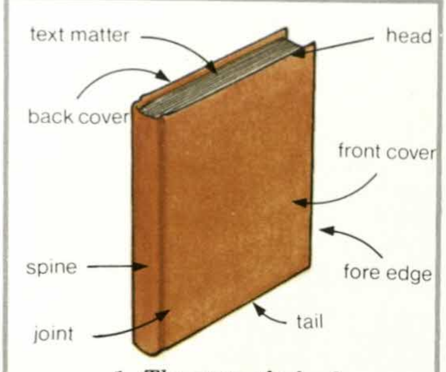
The rough side of the paper is the one to be glued. Strong wrapping paper, cartridge paper or 'craft' paper (similar to brown wrapping paper but with a rougher surface which makes it more suitable for gluing) are all recommended, as is marbled paper. Thin wallpapers are also suitable.

**Mull.** This is the stiffened, loosely woven cloth used to reinforce the spine of a book. 50mm (2″) or 75mm (3″) wide woven cotton bandages can be used instead of mull.

**Glue.** PVA adhesive is excellent for all the gluing processes described here. It should be used thickly on boards, mull and cloth, and thinned down with water for use on the end-papers.

# Binding a paperback

Most paperback books are made up of single leaves glued together—adhesive or 'perfect' bound, rather than stitched—and are therefore not very strong. A hardback binding or 'case' will make a paperback more presentable as a gift and will prolong the life of a cherished book. The instructions given here are for binding an average-sized paperback, but of course you will have to cut bookcloth, boards and end-papers to fit each book. Fig.1 shows the various names given to the parts of a book which are referred to in this and the following chapter on bookbinding.



1. *The parts of a book.*

## Full binding

**You will need:**

1 sheet of strawboard. Its length should be twice the width of one cover plus the width of the spine plus 12mm (½″). Its width should be the height of the book plus 12mm (½″).

1 sheet of bookcloth. Its length should be twice the width of one cover plus the width of the spine plus 30mm (1¼″). Its width should be the height of the book plus 24mm (1″).

2 end-papers, each twice the width and the same height as the pages or 'text matter'.

1 piece of mull or bandage 50mm (2″) wider and 24mm (1″) shorter than the spine.

PVA adhesive.

Few sheets of waste paper to protect surfaces while gluing.

Sheet of waste board for a cutting surface.

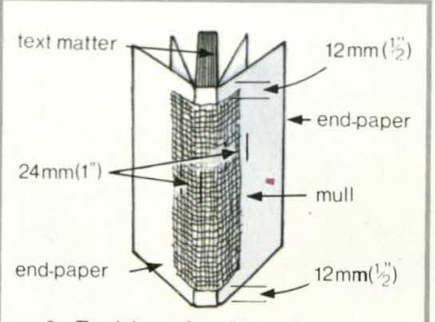
Tools as described.

### Preparing the book

☐ Remove the old cover by holding the text matter in one hand and bending back the front cover with the other, so that it is at right angles to the book itself. Then pull it firmly away from the spine. Do the same with the back cover. Pick away any loose pieces stuck to the spine but leave the glue.

☐ Fold the sheets to be used as end-papers in half, with the rough surfaces outside. Lay one folded sheet on waste paper and cover with another waste sheet leaving 6mm (¼″) showing at the folded edge. Cover the exposed edge with glue and stick on to the spine edge of the book. Rub firmly down with the bone folder to make a good crease. Repeat with the other sheet.

☐ When the glue on the end-papers is dry, glue the mull to the spine 12mm (½″) from the top and bottom of the book, and to the end-papers, keeping the end-papers folded close to the text matter (fig.2).



2. *Position of mull on the spine.*

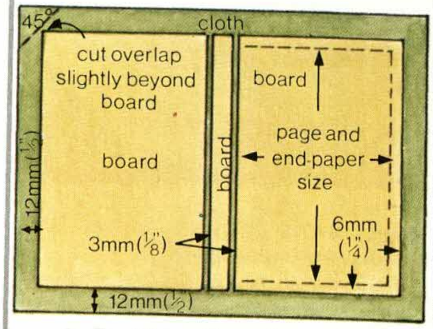
### Making the case

☐ Using the knife, steel ruler and set square, cut two pieces of strawboard 12mm (½″) longer and 6mm (¼″) wider than each cover and a strip the size of the spine. Use a piece of waste board as a cutting surface. Make sure that all corners are square and that the corners of the two main pieces match exactly.

☐ Cut out the book-covering cloth as described.

☐ Lay the cloth flat on a large sheet of waste paper with the right side down.

☐ With a pencil, lightly trace the book measurements on the cloth to help position the boards correctly. Leave a gap of 3mm (⅛″) between the main boards and the spine piece (fig.3).



3. *Position of boards on cloth.*

*Use your finger-tip to apply glue to the folded edge of each end-paper, using a piece of paper on top as a guard.*

*The glued edge of the end-paper is then carefully stuck on to the spine edge of the book.*

☐ Place one board on a sheet of waste paper and work in the glue thoroughly. Make sure that the glue is even and smooth. Position the board on the cloth and stick it down firmly. Glue and stick down the other two boards.

☐ Cut the corners of the cloth at 45° angles to the board and at a distance from the boards of twice their thickness (see fig.3).

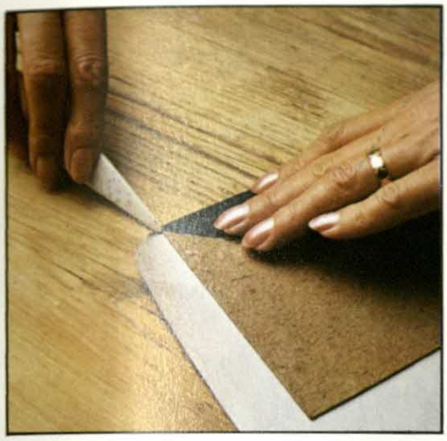
☐ Glue the head and tail overlap edges of the cloth, pulling the cloth firmly over the edges and rubbing down with the bone folder for a smooth finish. Glue the fore edge overlaps and stick them to the board. Smooth down carefully with the bone folder.

### Attaching the book to the case

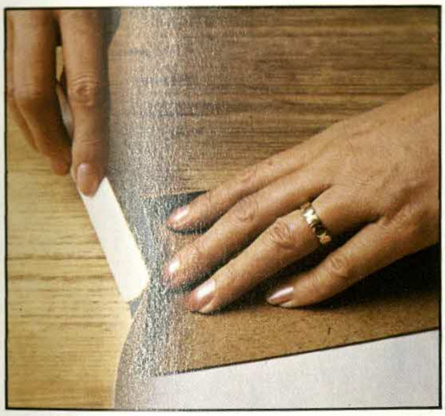
☐ Position the book inside the case, so that 6mm (¼″) of the case protrudes at the head, tail and fore edge and so that the spine lines up with the spine piece.

☐ Holding the end-papers closed, brush glue along the top end-paper from the centre outwards, including mull.

☐ Close the case on to the end-paper, making sure that the book is square with the case.



*Using the pointed end of the bone folder, tuck in the slight overlap at each corner, to give a neat finish.*



Paul Kemp

*Smooth down the glued edges of the cloth over the boards, using the blunt end of the bone folder.*

☐ Glue the back end-paper in the same way and place the book under a weight for at least two hours, or until the glue has dried.

### Titling the book

If the binding has been done simply to strengthen your book, you can use the original spine strip and front cover by gluing them on to the new cover, as seen in the photograph (page 1715). A transfer lettering sheet such as Letraset can be used on most surfaces and looks very professional. If you are good at calligraphy you can title the book with Indian ink. Or you could paint the title and possibly a design with acrylic paint.

## Half and quarter binding

A book is half bound when the spine and four corners of the case have a different bookcloth from the rest of the book. It is quarter bound when it has a different bookcloth on the spine from that of the rest of the book. These types of binding look pleasing and help to strengthen the book at its most vulnerable points.

**To make a quarter binding** (fig.4a) prepare book and cut out pieces of board as described, then cut a piece of bookcloth the width of the spine plus about 24mm (1″) either side, and 24mm (1″) longer than the spine.

☐ Centre the spine board on the bookcloth and mark its outline with a pencil.

☐ Coat the wrong side of the bookcloth with glue and stick it to the spine piece and main boards, turning the overlaps neatly (fig.4b).

☐ Cut two pieces of contrasting cloth or paper for the rest of each cover plus the usual overlap and so that they just overlap the spine cloth (fig.4c).

☐ Glue these pieces to the boards and stick on the end-papers as described.

**To make a half binding** (fig.5a) follow instructions for quarter binding until you have stuck on the spine cloth to the boards (see fig.4b).

☐ For the corners, cut four pieces of the same sort of bookcloth as the spine, with the usual overlap (fig.5b).

☐ Mitre the corners and glue them as described earlier.

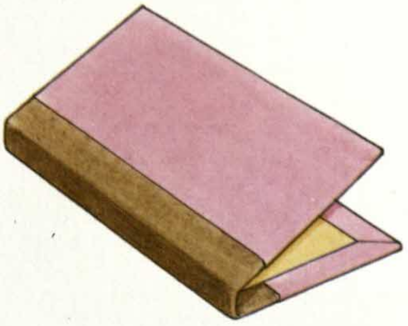
☐ Cut out two pieces of contrasting bookcloth or paper for the remaining parts of the front and back covers.

☐ Taking one piece of the cloth, place it on the front cover so that the left edge just overlaps the spine cloth (fig.5c).

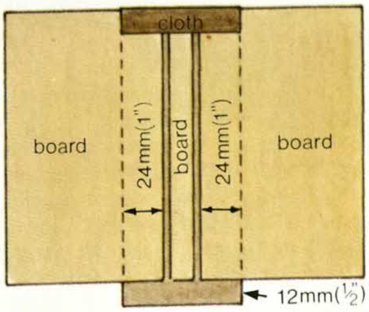
☐ Turn back the corners so that they only just overlap the corner binding (see fig.5c).

☐ Cut off the corners at the fold and glue the bookcloth to the boards. Repeat for the back cover.

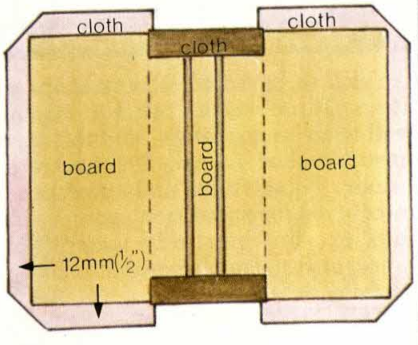
☐ Finish with end-papers as described.



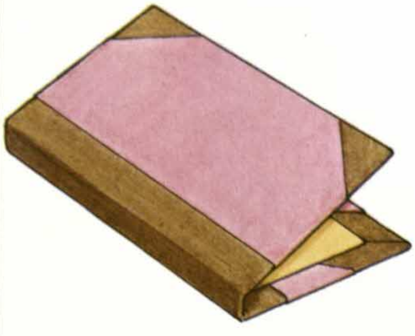
**4a.** *Finished quarter binding.*



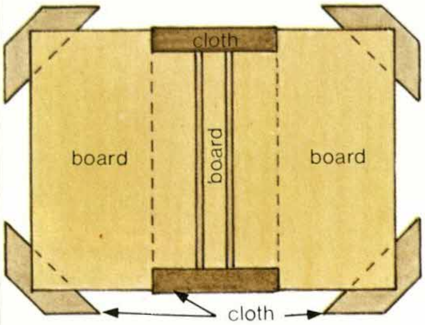
**4b.** *Attaching the spine cloth.*



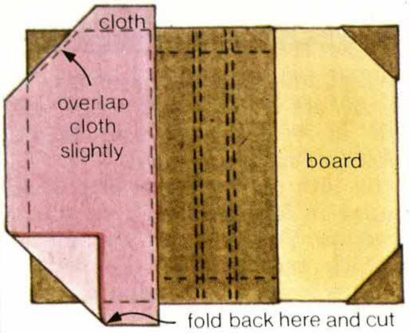
**4c.** *Covering the main boards.*



**5a.** *Finished half binding.*



**5b.** *Covering spine and corners.*



**5c.** *Covering the remaining boards.*

Paul Williams

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# Re-covering umbrellas

Cloth — sewing 22

Sandra Lousada

The first umbrellas were oriental. They did not fold up, but were cone shaped, made of waxed paper and used for protection against the sun.

In the 16th century umbrellas became popular in Italy and then were introduced into France, but it was not until the 18th century that the first umbrellas for rain were made and these were not very fashionable as the wealthy always used carriages. So umbrellas remained primarily 'parasols' —shades for keeping off the sun, and are still to be found in junk shops and attics. These elegant relics are usually well made and strong—only the covers have perished or torn. The frames can usually be salvaged and these can be re-covered for protection against either rain or sun, in sturdy waterproofed fabric or in colourful prints to match a summer dress.

Equally, modern umbrellas which are worn or torn can be imaginatively rejuvenated with new covers.

**Fabric.** When re-covering an umbrella choose a closely woven fabric such as cotton poplin or a woven nylon. After making and attaching the cover the fabric can be treated with an aerosol spray specially made for water proofing. Follow the manufacturer's instructions, spray, allow to dry and spray again.

## Unlined umbrella

**You will need:**

Fabric of your choice; an average umbrella with a frill takes about

*Pretty parasol—made to match. This umbrella frame was covered in an easy-care polyester/cotton fabric, to match the dress and designed by Steven Turner. The parasol is unlined and trimmed with a pleated frill.*

Coral Mula

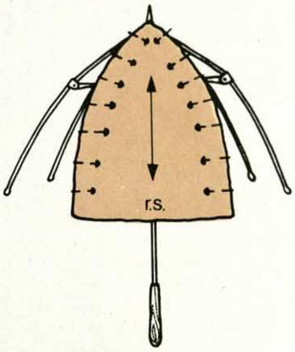
1.60m (1¾yd) of 90cm (36″) wide fabric, but more may be needed to match large patterns.
About 2.70m (3yd) of 1.3cm (½″) wide ribbon or binding in a matching colour.
Small metal ring, such as curtain ring and button to fit through it.
Matching thread.
Large sheet of paper and a pencil.

**Pattern.** If the umbrella still has a cover, remove it carefully, unpick the seams down both sides of one panel and use to make a pattern. To do this, trim away the seam allowance on the stitching line and draw around the panel on paper. Allow 1cm (½″) on the long edges and on the bottom edge, add these to the pattern and cut out.

☐ If the umbrella is without a cover, you will have to make a pattern from the frame. Lay the opened umbrella on paper and, starting from the top, draw inside the spokes of one panel. Add seam allowances as before.

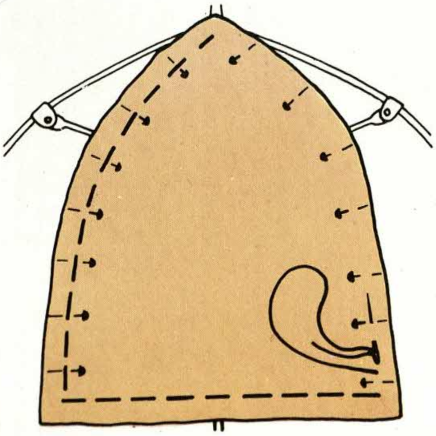
☐ Then cut out one pattern piece from fabric, making sure the straight grain runs down the centre of the panel.

☐ Pin the piece of fabric to the frame (fig.1) starting at the top and stretching across the spokes. The fabric should pull the spokes in at the bottom but not so tightly that the fabric pulls crossways.



1. *Section of fabric pinned to frame.*

☐ Mark the centre of the spokes and bottom hemline on the fabric with tacking stitches (fig.2). Unpin the panel and trim away any excess seam allowance to leave 1cm (½″) on the long edges and on the bottom edge. This panel becomes the pattern for the remaining sections.

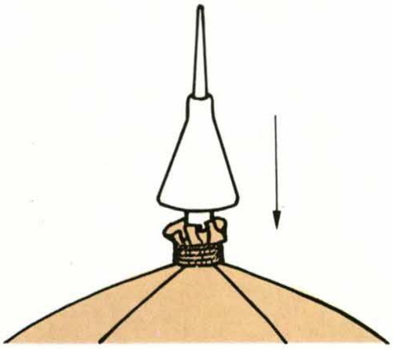


2. *Seams and hem marked with tacking.*

**Making.** Cut out the appropriate number of sections making sure any pattern on the fabric matches.

☐ With right sides facing, tack the sections together and try them on the frame. Make any adjustments to fit and stitch the sections together taking 1cm (½″) seam allowance. Press open the seams and trim turnings to 5mm (¼″). Neaten with a zigzag stitch or by hand.

**Attaching the top.** If the metal top of the umbrella is movable, the top of the cover can be neatened by simply binding the raw edge tightly with thread and pushing the metal top back down (fig.3).



3. *Fabric bound to umbrella frame top.*

☐ If the top cannot be moved, take the cover off the frame and sew a strip of narrow bias binding around the centre hole (Sewing chapter 1, page 15).

☐ A small circle of fabric can also be attached to the top of the cover to neaten and decorate.

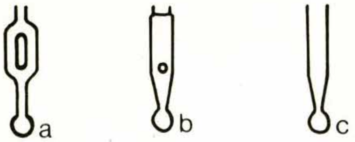
☐ To do this, cut a circle of fabric about 10cm (4″) in diameter, and make a small hem around the outside edge.

☐ Cut a hole in the centre just large enough to get the tip of the umbrella through, turn in the raw edges and stitch firmly into place.

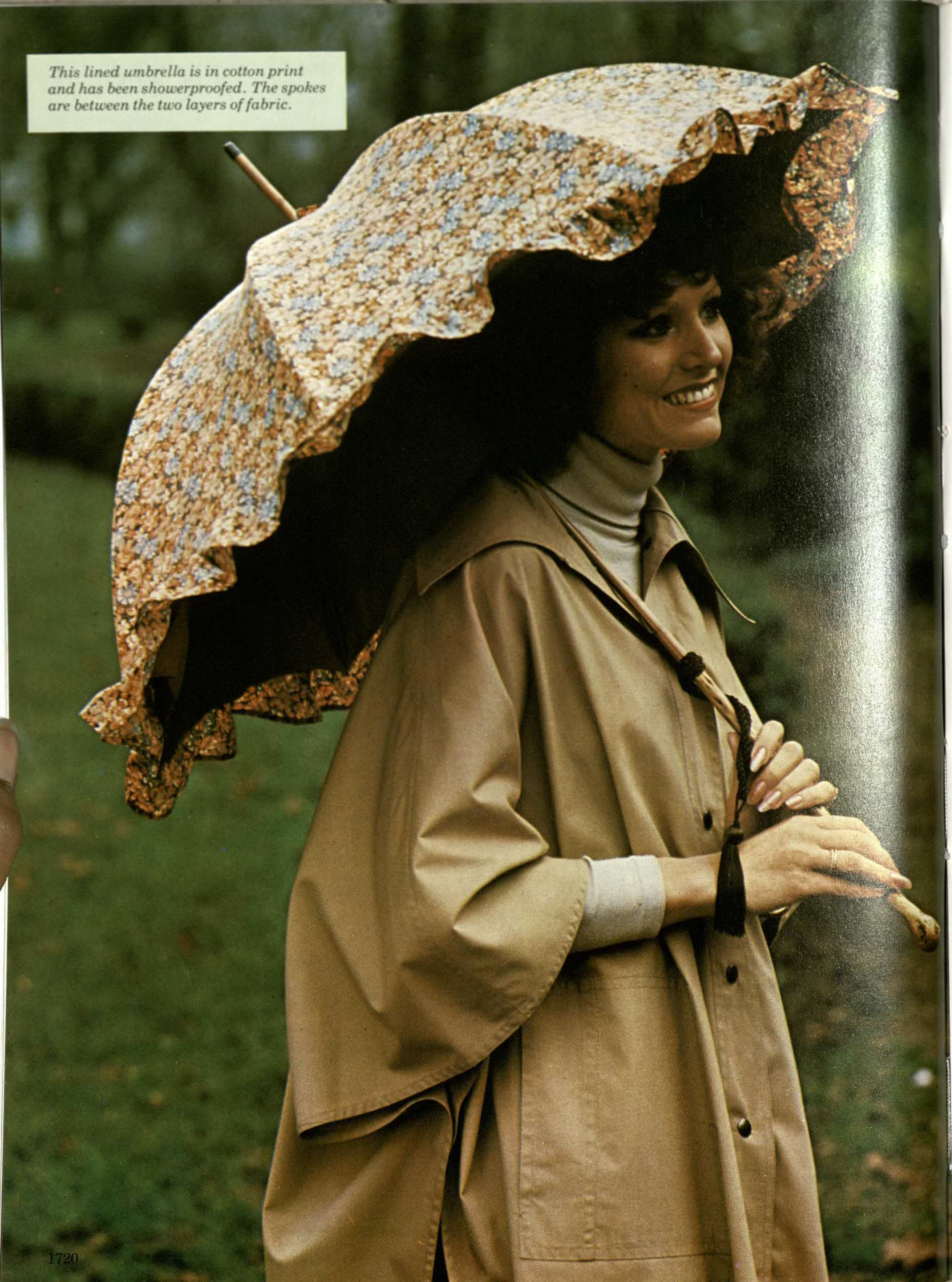
☐ Catch stitch the cover to the spokes through the binding at the top of the frame.

**A plain umbrella without a frill.** Take 1cm (½″) turnings to make a small double hem all around the outside edge.

☐ Some umbrellas have spokes which have a hole near the end. Fabric can be stitched to the spokes at these points to hold the cover in place (fig.4a). Other styles have detachable ferrules to which the hem can be sewn (fig.4b). If spokes do not have either of these (fig.4c) attach the cover to the umbrella with binding.

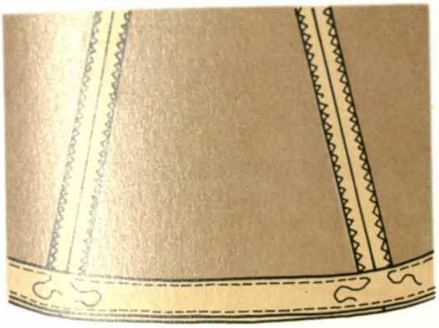


4. *Three examples of spoke ends.*



*This lined umbrella is in cotton print and has been showerproofed. The spokes are between the two layers of fabric.*

☐ Pin and tack ribbon or binding on the inside along the edge of the hem; stitch close to the edge of the ribbon on the outer edge. Stitch along the top edge of the ribbon or binding leaving small gaps where the ribbon crosses the seams (fig.5). Try cover on the frame, inserting the spokes into the openings left between the stitching.

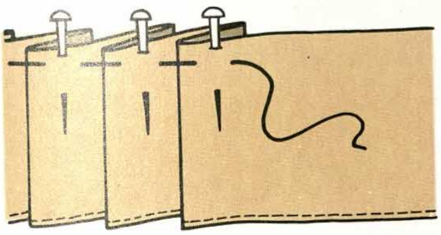


5. *Openings left in binding for spokes.*

**Frilled umbrella.** Cut a length of fabric three times the circumference of the umbrella and about 5cm (2″) wide.

☐ Sew narrow edges together with french seams (Sewing chapter 11, page 994).

☐ Neaten one long edge of the fabric with a narrow double hem. Pin the frill into small pleats and tack into place along the edge of the umbrella with right sides facing and taking 1cm (½″) turnings (fig.6). Alternatively, gather along the long raw edge 1cm (½″) from edge and tack the frill to the umbrella with right sides facing, distributing gathers evenly.



6. *Pleated frill pinned and tacked.*

☐ Stitch the short ends together with french seam.

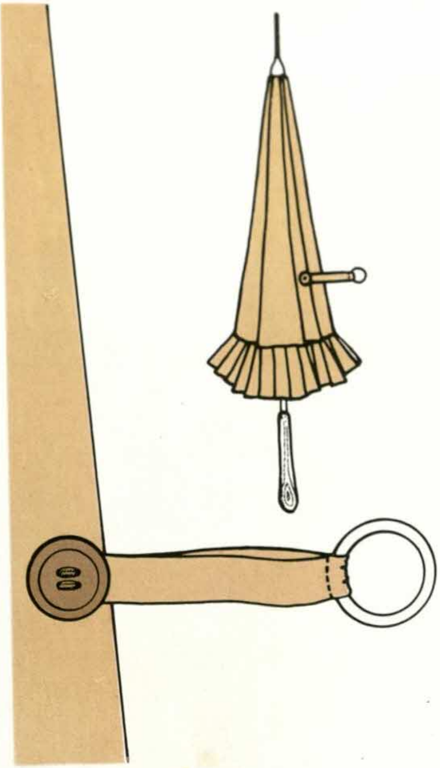
☐ Stitch the frill in place and trim the seam allowance to 5mm (¼″). Press the frill seam towards the centre of the umbrella cover.

☐ Attach binding along seam as described for plain umbrella and insert spokes.

**Umbrella tidy.** To keep an umbrella neatly rolled an umbrella tidy is essential.

☐ Cut a 2.5cm (1″) wide strip of fabric 25cm (10″) long. Fold the strip in half lengthways with right sides facing and taking 3mm (⅛″) turnings stitch close to the edge. Turn through and press. Slip the small metal ring on to the centre of the strip, fold the strip in half and stitch through the folded strip close to the ring. Neaten the short ends together with a small back stitch and by oversewing the raw edges together.

☐ Close up the umbrella and position the neatened end of the strip on the outside of one spoke. Stitch it firmly in place and stitch on the button to cover the neatened edges (fig.7).



7. *Umbrella tidy stitched to cover.*

100 Idées de Marie Claire/Liddell

*Umbrella in butterfly printed fabric.*

## Lined umbrella

For a very glamorous umbrella mix a plain and patterned fabric. The plain fabric could be on the outside with the patterned fabric used as a lining, or as made here with the patterned fabric on the outside. The lining completely covers the frame.

**You will need:**

Materials as for unlined umbrella plus the same quantity of lining.
50cm (20″) of cord, and a tassel.

**Making.** Make up the outside cover in the same way as for the umbrella with frill.

☐ Cut out and make the lining in the same way, neatening the outside edge with a small hem turned to the inside.

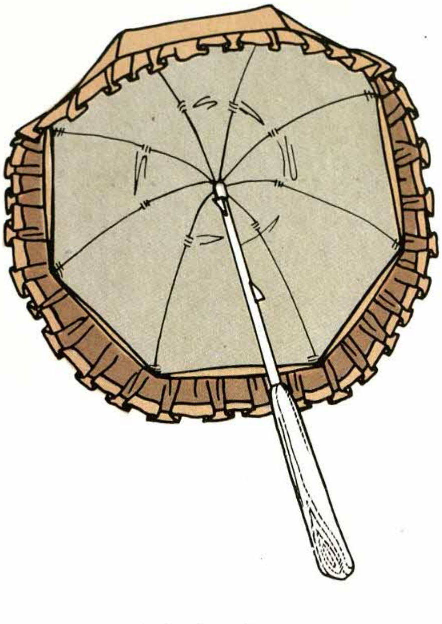
☐ After covering the umbrella as for the frilled umbrella, and with the umbrella open, place the lining to the inside by sliding the handle through the opening in the centre of the lining. If the hole is not large enough unpick a few stitches in one of the seams and then slip stitch together. The wrong side of the lining and the wrong side of the fabric should be facing.

☐ Catch and firmly stitch the outside edge of the lining on each seam line to the ribbon or binding and to the spoke, at the end of each spoke.

☐ Neaten the opening around the handle by turning in the raw edges of the lining and stitching firmly to the centre of the frame, completely enclosing the frame.

☐ Now catch stitch the lining to the top of each strut where it joins the spoke (fig.8).

☐ Trim around the top opening with cord and twist the remainder of the cord once around the handle and stitch. Attach the ends of the cord to a tassel.



8. *Lining stitched to the struts.*

Sandra Lousada

Coral Mula

# Candles from bought moulds

Wax 5

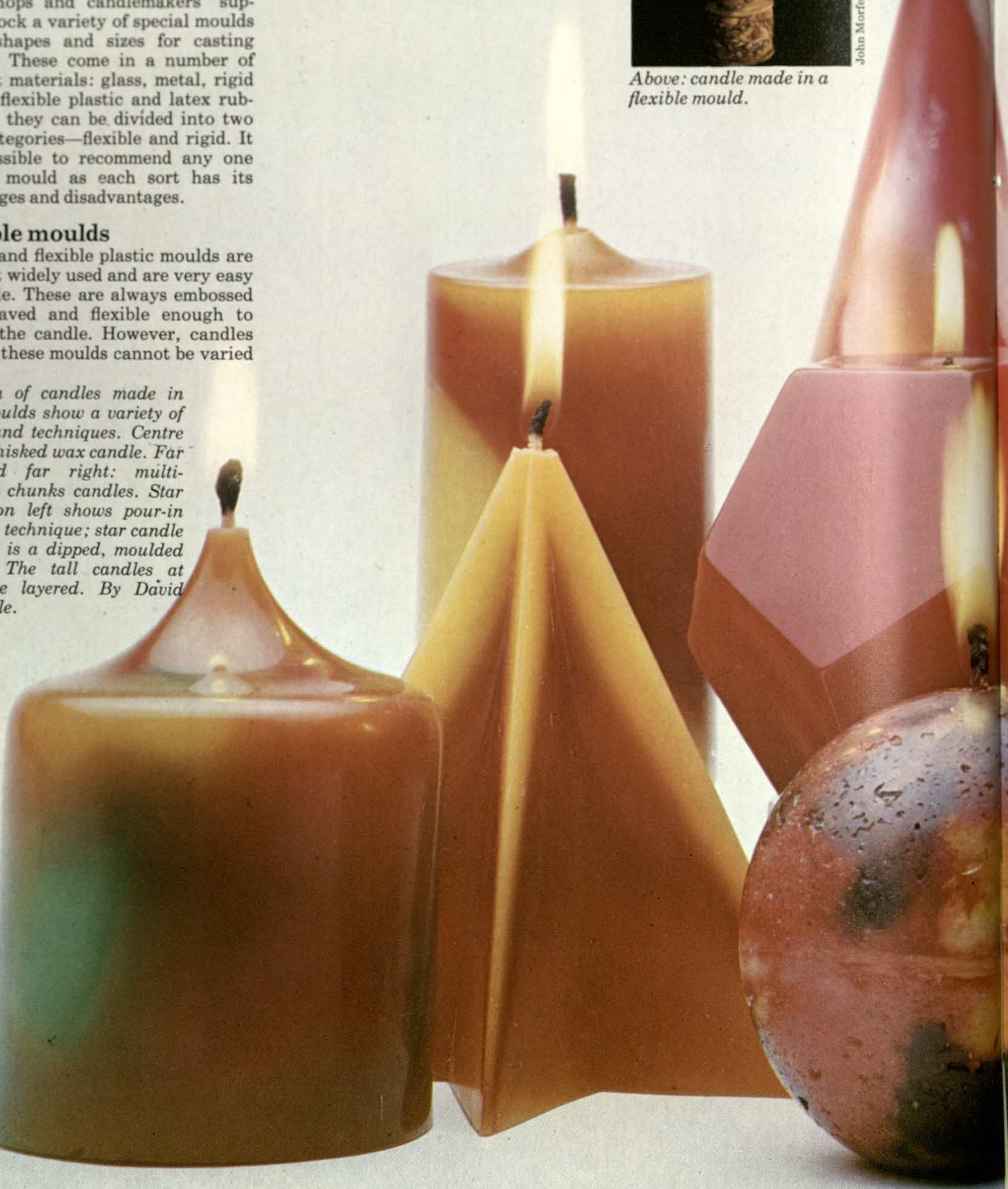
John Morfett

*Above: candle made in a flexible mould.*

Craft shops and candlemakers' suppliers stock a variety of special moulds in all shapes and sizes for casting candles. These come in a number of different materials: glass, metal, rigid plastic, flexible plastic and latex rubber, but they can be divided into two main categories—flexible and rigid. It is impossible to recommend any one type of mould as each sort has its advantages and disadvantages.

## Flexible moulds

Rubber and flexible plastic moulds are the most widely used and are very easy to handle. These are always embossed or engraved and flexible enough to remove the candle. However, candles made in these moulds cannot be varied

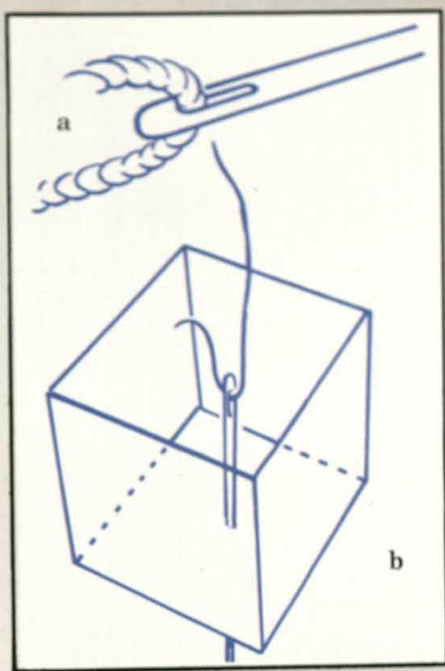


*Selection of candles made in rigid moulds show a variety of shapes and techniques. Centre front: whisked wax candle. Far left and far right: multi-coloured chunks candles. Star candle on left shows pour-in pour-out technique; star candle on right is a dipped, moulded candle. The tall candles at back are layered. By David Constable.*

much, only the colours can be changed with each casting. Another slight disadvantage is that these moulds do not have wicking holes so it is necessary to pierce the bottom of the new mould with a wicking needle before proceeding to cast the candle.

Note: only 1% stearin can be used in rubber moulds because the stearin rots the rubber.

**To make a wicking hole** thread up the wicking needle with the wick (fig. 1a) and insert it down into the bottom of the mould (fig.1b). Pierce a hole in the centre and draw the wick through it. Be sure to keep the wick hole as small as possible.



Trevor Lawrence

1. *Threading up the wicking needle and inserting it into the mould.*

When the wick has been inserted through the hole apply wax seal to seal off surrounding gaps through which the hot wax might run. Then pull the wick taut as described in Wax chapter 3, page 1275.

**Casting.** If you are using a rubber mould rinse it out with a little washing-up liquid before the wax is poured in; this makes it easier to release the finished candle. This procedure is not necessary with flexible plastic moulds since these are comparatively easy to remove.

It is important to cool the candle quickly and to observe the following procedure when topping-up. As the candle begins to cool a skin ordinarily forms on the top of the wax. With flexible moulds, this skin must be broken by stirring around the wick area, otherwise a well will not form and the candle cannot be topped up properly (see Wax chapter 3, page 1275).

**Removing the candle.** When the candle has hardened, peel the mould back on itself to release the candle. To facilitate peeling, lubricate the outside of the mould with washing-up liquid. Then restore the mould to its natural shape, wash and dry it thoroughly (do

Paul Kemp

not use direct heat) and store the mould away from heat and sunlight.

**An antiqued effect** similar to that in the photograph on page 1722 can be made by painting the candle with poster paint mixed with a little washing-up liquid. Allow to dry, then wipe candle with a damp cloth. Repeat process about three times and then polish candle with a soft cloth.

## Rigid moulds

Rigid moulds permit a number of variations on each basic shape and most of the candles shown in this chapter were made in them.

**Metal moulds** are splendid because they are virtually indestructible. Also metal is a good heat conductor so the wax cools rapidly and air bubbles are less likely to occur.

**Glass moulds** have the disadvantage of being breakable but their very smooth interiors leave little, if any, finishing off to do after the candle has been removed from the mould.

**Rigid plastic moulds** are the best all-round moulds for beginners to use since they are both strong and cheap. Their disadvantage is that perfumed candles cannot be made in them because the perfume affects the plastic.

## Layered candle

This is probably the simplest of the multi-coloured candles and therefore the one that gives the amateur candlemaker the most scope for inventiveness.

☐ Wick up the mould. (This means preparing it for the wax as described in Wax chapter 3.)

☐ Pour layers of differently coloured wax heated to 85°C (185°F) into a mould.

Allow each layer to set partially before adding the next one. After each layer has been poured, place the mould in a cooling bath (a saucepan of cold water) until there is a skin which, if prodded lightly, will give but not break.

If allowed to become hard the layers will not fuse together; if too soft, the hot wax will re-melt the lower layer, and cause the colours to blend.

**Diagonal layers** make interesting effects and these can be built up by standing the mould at an angle in the cooling bath.

## Coloured chunks candles

These candles can be made in two ways and finished off to create various effects. They are made using left-over bits of wax and for this reason have economic value as well as beauty.

☐ Chop up small chunks of left-over coloured wax in several colours.

☐ Wick up the mould and fill it loosely with the coloured chunks, keeping them towards the outside edges of the mould.

☐ Pour in melted wax, heated to 93°C (200°F) to fill up spaces between chunks.

☐ Allow the mould to stand for a few minutes then place it in a cooling bath until it is hard (about an hour or so).

If you are not satisfied with the finish remove the candle, heat an old kitchen knife and 'iron' it over the surface of the candle so that a thin layer is melted off and the colours are properly fused. (A blowtorch or other flame source could also be used.) Practise first on old bits of wax.

Alternatively you can carve the outer shape to expose more of the colourful chunks.

**Spooning method.** This is another way to use chunks either dyed or undyed and the effect is slightly different.

☐ Melt dye disc.

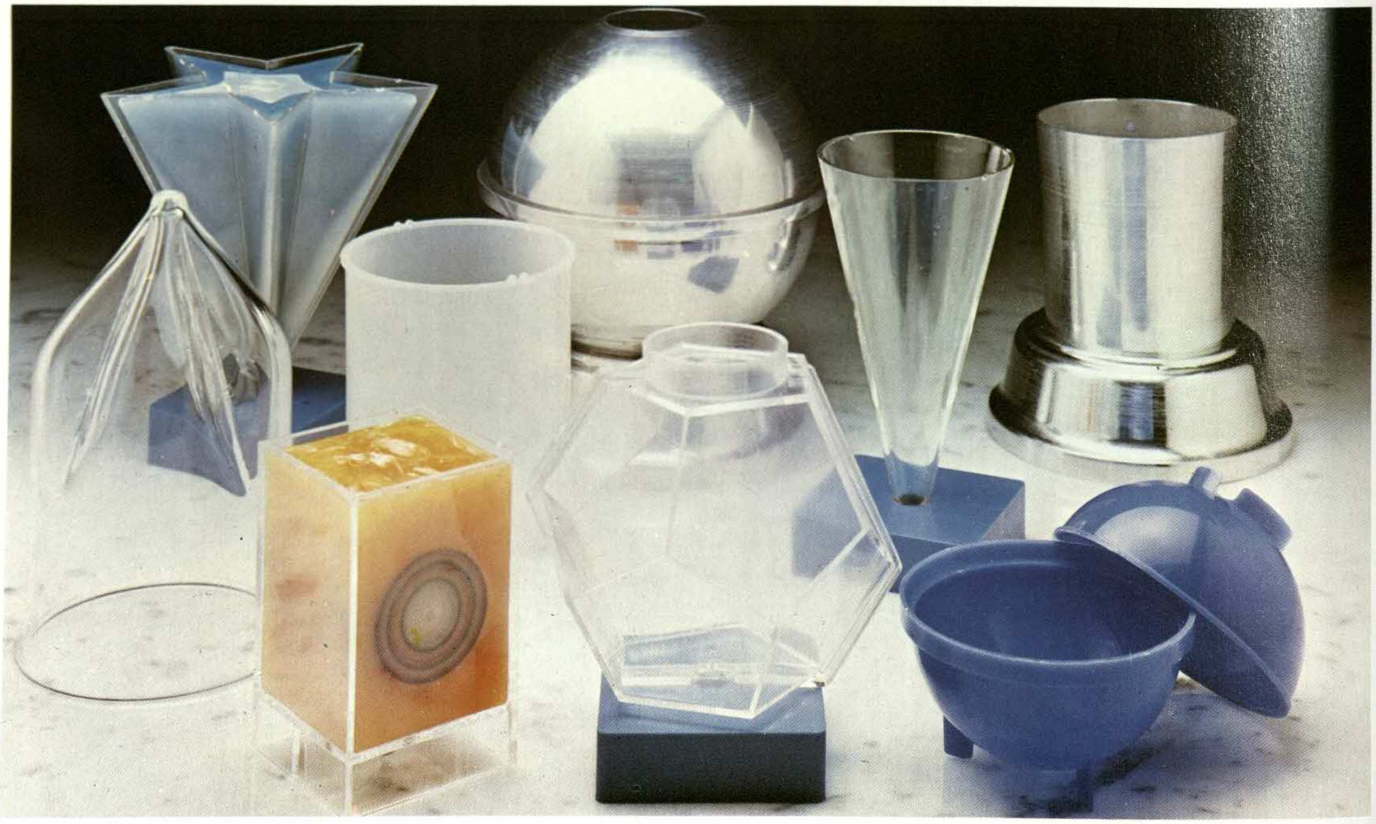
☐ Pour wax over the chunks at 127°C (260°F). Then immediately spoon in part of melted dye disc so that it can flow around the chunks and through the new wax too.

☐ Plunge the mould into a cooling bath to harden.

## Pour-in pour-out candle

☐ Have ready a quantity of coloured wax which is prepared with four times more colour than the ordinary mixture described in Wax chapter 1, page 52.

☐ Pour uncoloured melted wax into a wicked up mould. Leave for a few minutes and then place in a cooling bath. Differently shaped moulds cool at different temperatures so a little experience in working with these moulds is required but, generally, a



*The shapes and sizes of rigid moulds vary considerably, providing a wide scope for inventive candlemaking.*

star mould should be left in the bath for two minutes and a square for five minutes as you only want the outside of the wax to harden.

☐ Tip all unmelted wax back into the pot.

☐ Pour in the coloured wax which has been prepared and return the mould to the cooling bath for a minute or two.

☐ Tip out unmelted wax again and fill the mould with white or pale-coloured wax. This makes the hazy effect shown in the photograph on page 1722.

## Whisked wax candle

Dye for whisked candles should be mixed four times stronger than for ordinary candles as with the pour-in and out candle just described.

☐ Prepare several colours and whisk the hot wax until it has the consistency of scrambled eggs. The wax will now be cool enough to handle.

☐ Press it down into the wicked-up mould using alternating colours.

This candle cools quickly and has textured effects all of its own.

## Bull's-eye candle

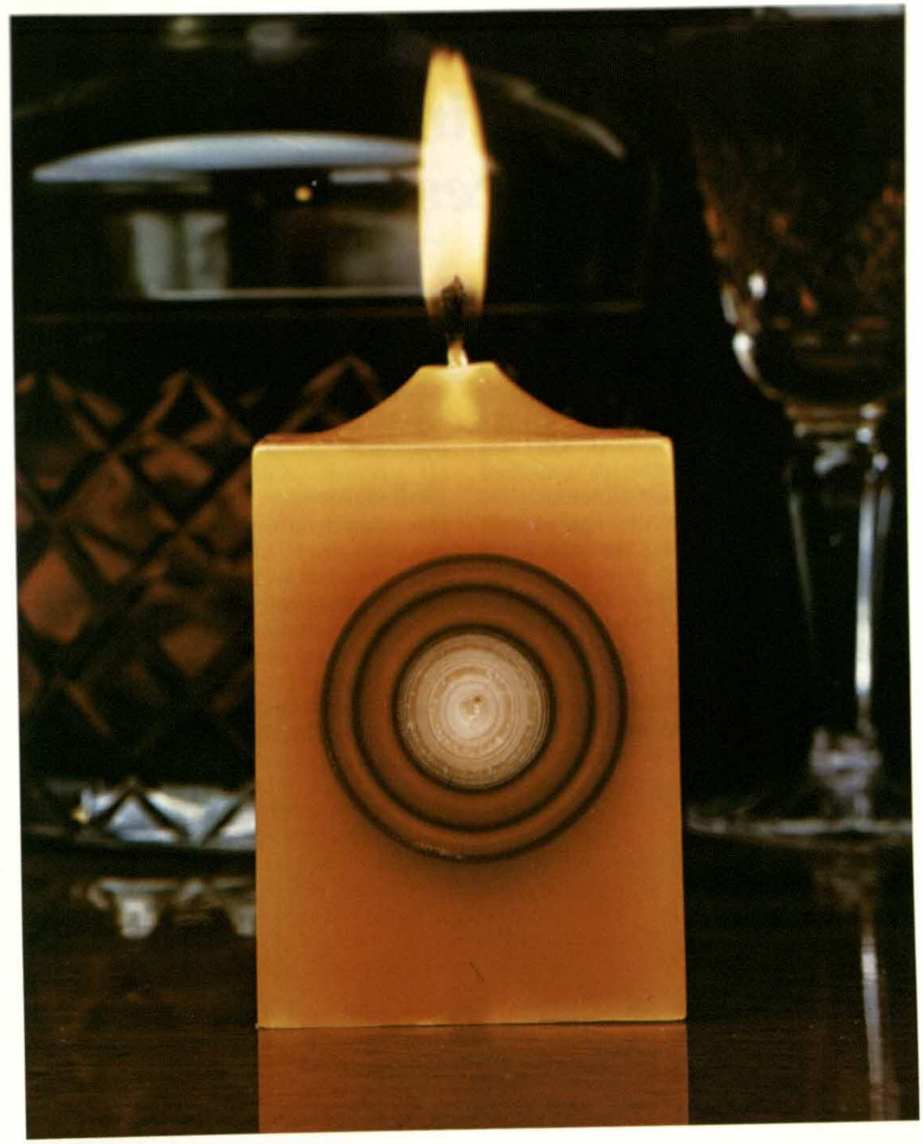
Since it is necessary to prick the plastic mould with a pin to make this candle the mould will be ruined for general use but it can be used again to make bull's-eye candles.

☐ First make a dipped candle as described in Wax chapter 1, page 52 but dip it into a variety of different colours, one after the other.

☐ While still warm pull out the wick and cut the candle into slices 5mm (¼″) thick.

☐ Find the centre on each side of the mould (or the opposite points of the diameter if it is cylindrical) and make a small hole with a hot pin that has been held in a flame for a moment (fig.2a).

☐ Wick up your mould and place slices of the dipped candle inside the mould, flat against the sides at the desired positions. If the mould is rounded press each slice in place immediately after slicing it so that it will take on the contour of the mould.



Paul Kemp

*Vivid bull's-eye candle by David Constable was made in a rigid plastic mould.*

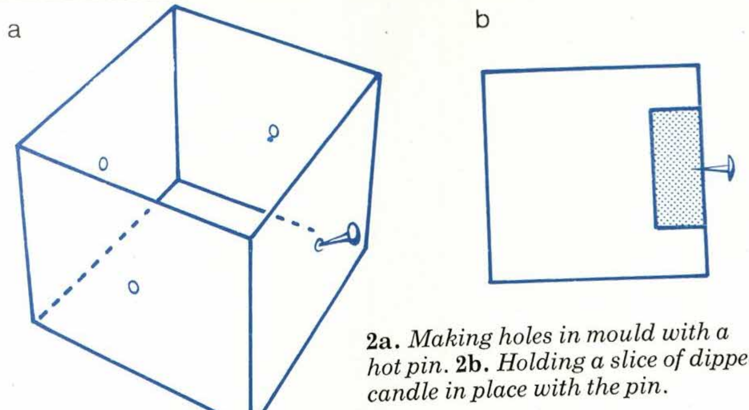
☐ Now put the pin in to hold the slice in place (fig.2b).

☐ Fill the mould with wax heated to 82°C (180°F) and place in a cooling bath until hard.

When the candle is removed from the mould the transverse sections of dipped candle produce the colourful bull's-eye.

## Dipped candle

If a moulded candle is dipped successively into coloured waxes it will retain its shape. The surface can then be incised to reveal colours beneath.



**2a.** *Making holes in mould with a hot pin.* **2b.** *Holding a slice of dipped candle in place with the pin.*

Trevor Lawrence

### Helpful hints

**To flatten base.** If the base of a candle requires flattening to make it stand straight cut a groove in the bottom to recess the wick end, then melt the base in an empty saucepan over a burner while holding the candle by the wick.

**To remove blemishes** wet a stocking or old rag with white spirit and rub over the area. Allow to dry.

**To polish.** Candles can be given a shiny finish by polishing with a wet tissue.

# French polishing wood surfaces

Wood — finishes 5

French polishing is the name given to a wood finishing process which originated in France during the Middle Ages. By the late seventeenth and eighteenth centuries french polished furniture had become fashionable in many European countries, and is still unequalled today for its beautiful finish.

French polish is composed mainly of shellac dissolved in methylated spirit. Shellac is formed from a dark, natural resin called lac which is melted, strained and formed into thin sheets. The finish of french polished furniture is characterized by a smooth and lustrous sheen which accentuates the grain and patterns in the wood. This is the result of the polish technique—a method consisting of building up layers of polish, rather than the ingredients. With patience and experimentation—preferably on an old, unwanted piece of furniture—you can master the basic skills. Then, with new-found confidence, you can turn an old table or an ageing sideboard in the dining room into attractive pieces of furniture.

*Using firm, even pressure, rub the polish into the wood with a 'rubber' made from wadding or cotton wool covered with a soft cotton rag.*

## Polishes

Nowadays there are numerous liquids available in bottles and sprays which are intended to simulate the appearance of genuine french polishing. These provide an easy way out and, if used properly, are fairly convincing imitations. However, it does not take an expert to see that these synthetic substitutes do not give a finish to compare with genuine french polishing.

There are a number of different polishes available for use in french polishing, including transparent, white (for light woods), black (used for ebonizing), garnet (deep brown) and button polish (slightly opaque yellow). It is best to try button polish for your first job as it is a hard polish that dries very quickly.

## Suitable surfaces

The french polishing process is equally suitable for giving a finish to new furniture or for refurbishing old articles you may have.

The types of furniture most commonly french polished are table tops, sideboards, chests of drawers and the like. Dark woods such as mahogany and oak look particularly attractive when given this treatment. But other timbers are also suitable, and even whitewood furniture can be greatly improved in appearance by being french polished. French polish is not waterproof nor heat resistant so bear this in mind when choosing the item.

**Retouching.** If an old piece is already french polished, it is worth considering whether to go as far as stripping off the old surface. Dirty furniture can be washed with soap and water and dried quickly, or cleaned down with a proprietary cleaner from a hardware shop. Scratches can be coloured in with oil stain or scratch cover. Then, when the stain is dry—a day or two later—polish with a furniture wax or cream, rubbing hard. While the surface may not be perfect, you may be able to 'save' a mellow old piece in this way without having the bother of a complete repolish.

**Refinishing.** If, however, the old surface is too far gone for this treatment, you will need to remove the old finish with a paint or varnish stripper, preferably one neutralized with white spirit rather than water, as water tends to raise the grain and give you more work later when you come to sanding and filling.

After stripping off the old surface leave it to dry for about an hour before sanding down. Always begin sanding with a fine grade paper—then, if you find it clogs very quickly, change to a coarser paper. Never use a disc sander as this will scar the wood; preparation of a surface for polishing must always be done by hand, working along the grain.

Dust off any dirt and dust before you commence polishing.

**New surfaces.** Surfaces which have not been treated in any way whatsoever must be freed of dirt and grease. Rub down the wood, along the grain, with fine grade glasspaper and wipe away dust and grit before starting the polishing process.

If you do not prepare your piece of furniture thoroughly beforehand small faults will become glaring as the polishing progresses. Therefore check closely that you have sanded the whole area smooth that you intend to polish and all dents and bruises in the timber have been removed.

**Filling in.** A surface which has been previously treated will probably not need filling in, but new surfaces, especially timbers with large pores such as walnut or mahogany will need filling in before polishing. Commercial fillers in various shades can be bought ready mixed from hardware stores. Rub the filler well into the grain and wipe clean and dry. If necessary sand with a very fine grade paper for a smooth surface suitable for polishing. It is important that the filler is left to dry completely.

**Staining.** Once the surface has been prepared you may wish to stain the wood. This is optional and does not affect the actual polishing.

There are three types of stain commonly available—water stain, spirit stain and oil stain. Oil stains, such as those by Rustins, are the most popular and easiest to use as they do not raise the grain when applied to the surface. Water and spirit stains do raise the grain so the timber will have to be sanded after staining.

Before staining try out the stain on bits of scrap wood. If the stain is too dark it should be diluted with white spirit and if it is too light more stain can be added.

**Coating.** After filling in and staining, allow the surface to dry, then coat the timber with the polish using a polish brush.

Polish brushes can be obtained from DIY dealers and hardware stores. It is important to use a polish brush, as paintbrushes are not suitable for this purpose. Leave the polish to dry for at least an hour or longer. It is always best to leave the item as long as possible between each process, so that the filler, stain and polish can set in properly.

**Sizing up.** Once the polish is dry, rub down the surface, along the grain, with a very fine grade glasspaper until it is smooth. Immediately after sanding wipe all dust off the timber with a dry duster or rag.

Now begin to build up the polish by using a 'rubber'. A rubber is made by rolling a piece of wadding or cotton wool into a conical shape resembling half a pear and covering it with a fine porous cotton rag. It should fit comfortably into the palm of the hand.

Dip the rubber into the button polish and squeeze it out so that it will not be too wet. Now rub the polish on to the timber—first rubbing along the grain and then moving in circular movements. As the amount of polish in the rubber decreases your pressure on the item must increase to ensure that the rubber is dried out before recharging with polish. Work carefully and make sure you cover the whole area of timber.

The rubber may become sticky during this operation but this can be overcome by applying a tiny amount of raw linseed oil to it, which will act as a lubricant. Oil is considered a necessary evil in french polishing, so be careful not to use too much or the surface will refuse to dry and you will have to take off all the polish with methylated spirit and start again.

The more you rub the polish into the timber the more lustrous the finish will become. Do not lift the rubber from the surface but slide it off the edge when you have finished or are recharging. When you are satisfied that you have polished the timber sufficiently 'straighten off' with the rubber using polish but no oil.

**Colouring.** If the finish is patchy, ie lighter in some places than others, mix some spirit black or vegetable black into a jar with the polish. Tint the colour to the required shade by adding Bismark brown, which, despite its name, is in fact red when dissolved. Spirit black, vegetable black and Bismark brown are all available in powders and are soluble in methylated spirit and polish. Bismark brown should be used cautiously as it is a very powerful dye and is poisonous.

When you have achieved the desired colour, apply the dye to the lighter patches on the timber until a uniform shade is obtained.

**Fastening.** Once the timber is an even shade, coat the surface once more with button polish using the rubber. This has the effect of making the finish colour fast.

**Finishing.** Leave the timber to dry for approximately one hour before lightly sanding down. Apply a spot of linseed oil to a fine grade glasspaper to prevent the finished surface being scratched. Afterwards wipe the timber dry with a duster or soft rag.

Once again apply the rubber in straight and circular movements—using linseed oil as a lubricant if necessary.

Finally finish off with straight movements along the grain.

It is a good idea to keep the rubber after use as it will save you the trouble of making a new one when you next want to french polish a surface. The best way to preserve a rubber is to keep it in an air-tight tin. If you do this it will remain soft and pliable.

*The lustrous finish which enhances the grain and the wood inlay on this antique table is characteristic of french polished furniture.*

Paul Kemp

# The fun of face and body paint

Colour — paint 23

It is possible that the first painting surface ever used by man was man himself, for face and body paints appear to have been used from earliest times and for a variety of reasons—to enhance beauty, increase fear in the beholder, give religious or caste significance or ward off evil spirits—in short, to render ordinary man extraordinary.

## Face painting

Not surprisingly, face painting is closely linked with masks: both create disguise and a sense of make-believe. Early actors in Greece, for example, performed behind masks which were eventually replaced on the Western stage by face paint which has one great advantage: facial mobility is evident and a degree of emphasis can be given to a character which is not possible with a mask.

**Ideas for face painting.** Using stage make-up or paint, faces can be made to look old, young, malevolent, comical or fanciful; fairies, animal faces and demons can be created and a 12-year-old child can be transformed into an aged crone or a rampaging Indian warrior.

One of the best-loved faces of all is that of the clown and the strongly defined lines that give the clown his sad and melancholy smile are not difficult to apply. Clown faces can be copied from photographs in magazines or from prints and circus posters, as can a host of other dramatic characters, but it is equally interesting to experiment and develop a face to suit one's own fancy.

This chapter deals with the basic use of paint to create fanciful characters for fun, for costume parties or the stage while the use of stage make-up to create individual, human characters for the theatre is dealt with in a later chapter.

## Types of paint

A number of substances can be used to paint faces and bodies. Dyes and stains from earth and from vegetable materials are used by many primitive tribes. Ordinary cosmetics such as lipstick and eyeshadow are easy to obtain and can be used for many dramatic and colourful effects—especially where broad delineation is needed—as well as for accentuating eyes and mouth. Those which come in tubes or crayons are the easiest to use. But while cosmetics are perfectly suitable and are fun to experiment with, the best preparation is theatrical greasepaint.

**Greasepaint** was especially developed for theatrical use. It is easy to apply and, most important, can be removed with comparatively little effort using removing cream. A little goes a long way and one stick can last for years.

*Below: a white-faced clown before and after application of make-up. The false nose is made from nose putty.*

Greasepaint can be purchased from theatrical suppliers and, starting with a few shades, a whole stage make-up kit can be assembled fairly rapidly.

## Using greasepaint

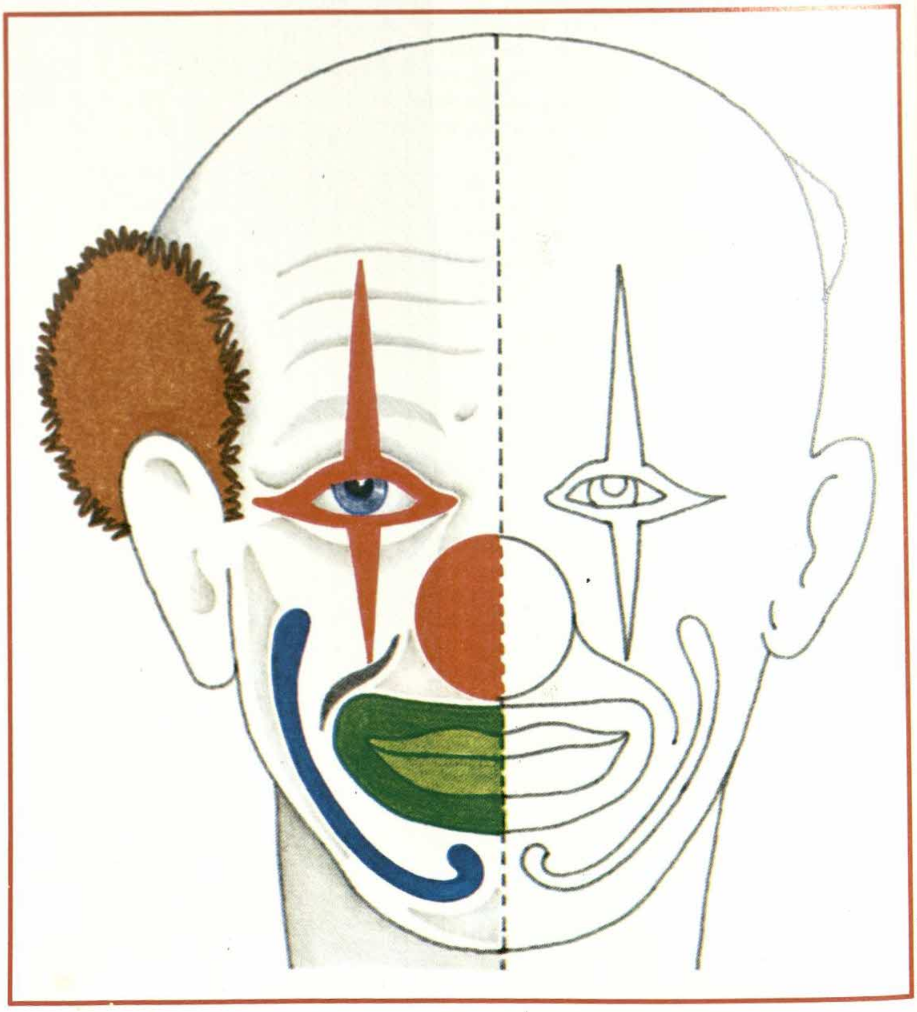
Greasepaint should always be applied to completely grease-free skin from which all previous make-up has been removed.

Professional greasepaint normally comes in stick form and shades can be intermixed to get the correct tone. One type of stick is for foundation shade and the other is a stick liner designed for special effects.

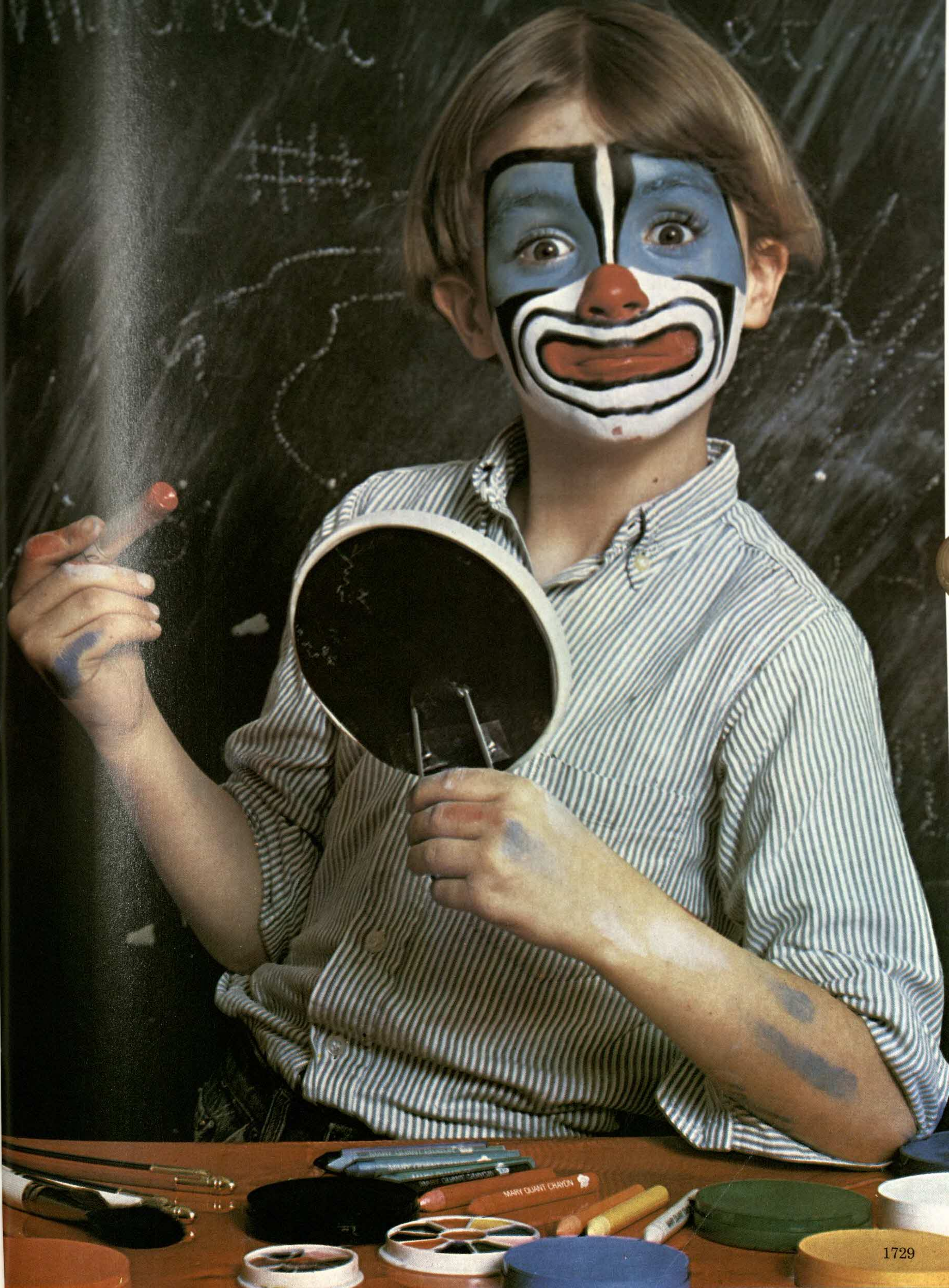
**The foundation** is the basis of most theatrical faces. It can be painted over, as in the case of Indian 'warpaint' over 'redskin' foundation colouring, or it can be used as a base for creating highlights and shading.

To apply foundation, rub the stick in the palm of one hand, rub both hands together and then rub the foundation on your face with both hands. In this way the lightest possible film of make-up covers the skin.

*Right: a young performer experiments with make-up and creates a rather different type of clown face.*



Victoria Drew



Victoria Drew

**Greasepaint liners** are smaller sticks available in several shades for eyes, lips, etc. These usually have pointed ends. In the case of a clown (or other boldly painted face) paint can be applied with a liner over the white foundation base. In cases, such as the tiger face shown, it can be applied directly on the skin.

**Special blending powders** to set make-up and remove shininess are also available. The powder is applied with a velour puff and patted well into the foundation.

After application it is possible to reduce perspiration by dipping your face in a basin of cold water or dabbing it with wet cotton wool. Press a towel lightly to your face to dry, but do not rub, and your make-up will not be spoiled.

## Body paint

Often painting your face is not sufficient and neck and limbs must also be painted in keeping with the essential disguise. A liquid make-up or body paint is available for this purpose. Body paint is sometimes called 'wet white' even though all sorts of shades and hues, including gold, are obtainable.

Apply body paint with a damp make-up sponge and then smooth it into the skin with your fingers. This gives a light, natural appearance rather than a thick, coated look.

**To remove body paint,** simply wash with soap and water.

## Face paint

Facial alterations are possible with the use of materials other than make-up. These can change the shape of the nose, facial hair and teeth.

**Nose putty** is one of the most useful of these materials and can be moulded in the hand to make almost any style from Pinocchio to a clown nose like a light bulb. Nose putty is applied directly to clean skin. After the basic shape has been kneaded in your hand and stuck on it can be more finely moulded *in situ*. Edges should be smoothed out against the skin with a paintbrush.

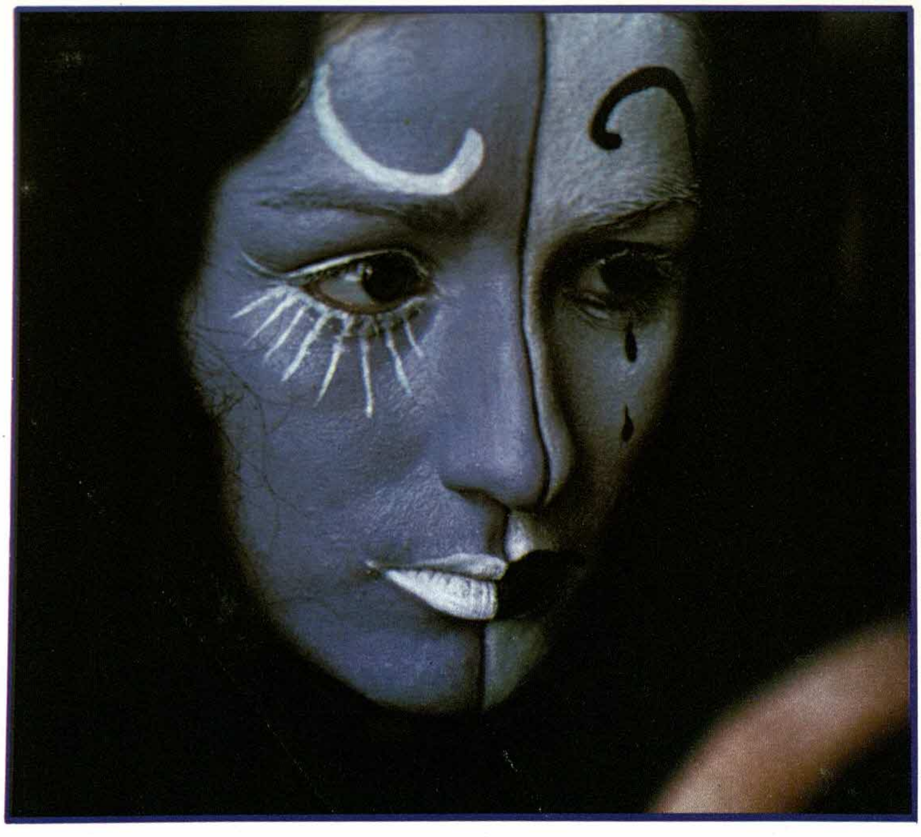
**To remove nose putty** 'slice' it off with a thread held tightly between both hands.

**Tooth enamel** comes in black and in white to either emphasize teeth or to black a few of them out to make, for example, a fearsome pirate.

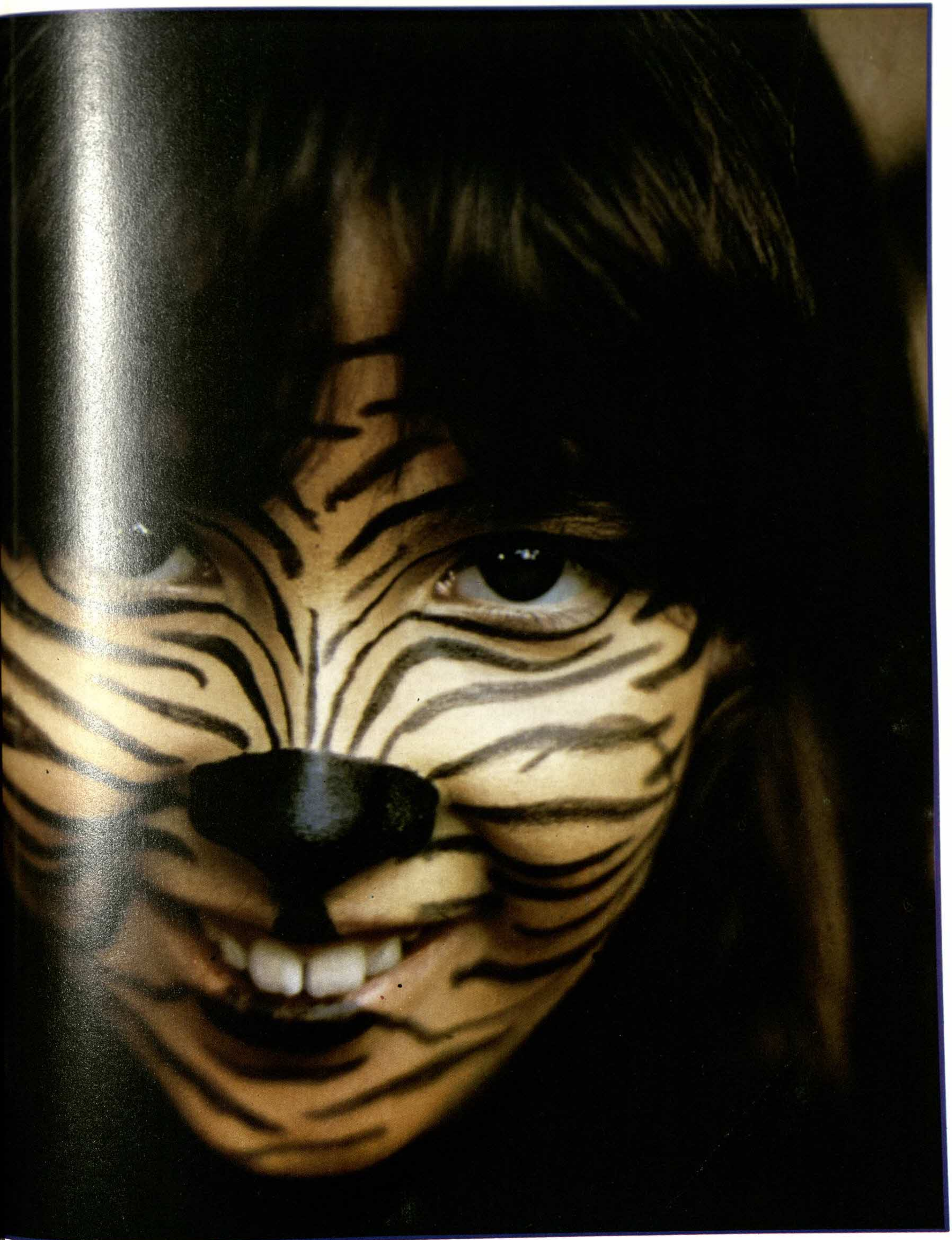
**Hair.** False beards and moustaches are also stocked by theatrical suppliers. The less expensive varieties are made of crepe wool and come in a plait that can be steamed and teased. The crepe hair is applied with spirit gum and trimmed with ordinary scissors.

**To remove the crepe hair** dab the hardened spirit gum with surgical spirit to soften it. In this way no soreness will be felt.

*Below: a dramatic positive/negative 'mask' is achieved with a few colours. Right: to turn a little girl into a tiger paint on stripes with liner.*



100 Idées de Marie Claire/Jean Denis Matin



# Fireside chairs: upholstering

This chapter shows how to apply new upholstery to fireside chairs. Details of preparing the chairs are described in Upholstery chapter 8, page 1706.

## Basic equipment

Tack hammer and lifter.
General-purpose clear adhesive such as Bostik 1.
Small curved sewing needle and strong thread.
Scissors.
Regulator.
Staple gun (optional).

## The new materials

**Rubber webbing.** To calculate the amount of webbing to allow for each strand, measure the distance it will span and subtract 10 per cent for tensioning. If the strands are attached with metal clips add 2.5cm (1″) to the length of each strand to allow for fitting the clips.

**Metal clips.** Rubber webbing is sometimes fitted to wood frames with metal clips which grip the ends of the strands and are inserted into a slot in the frame. Buy two clips for each strand you are replacing.

**Jute webbing.** Measure the distance each strand will span and add 5cm (2″) for turnings. Add about 15cm (6″) to the total to allow for easy fitting.

**Tacks.** If you are attaching rubber webbing with tacks, rather than with clips, you will need six 1.3cm (½″) improved tacks for each strand. For each strand of jute webbing you will need 10 1.3cm (½″) improved tacks. Where the back is lined with hessian rather than webbing, you will need enough 1.3cm (½″) improved tacks to place them 2cm (¾″) apart round the edge of the frame.

For attaching all the other layers you will need about 450gm (1 lb) of 1cm (⅜″) fine tacks.

**Making a template.** To calculate the size of the materials to be used on the back of the chair, make a paper template of the exact shape. To do this, hold a piece of paper against the frame and mark the lines of the outside edge of the frame all round. Mark the positions of the arms. If the seat cushion is not an exact rectangle, make a template of its shape.

**Hessian.** If the inside back was not spanned with webbing it may have been lined with hessian. To replace this buy a piece of heavy furnishing hessian 2.5cm (1″) larger all round than the basic template.

**Foam.** This is the easiest material to use for padding, whatever may have been used for the original padding. To pad the back of the chair, enlarge the template by 2.5cm (1″) all round and buy a piece of 5cm (2″) foam of this size and shape (most foam suppliers will cut the foam for you from your template if you give them enough notice). If the seat foam needs replacing, buy a piece of 7.5cm (3″) thick foam to the required size and shape.

**Calico.** This is used in strips for attaching the foam to the inside back of the chair and for covering the foam before the main cover fabric is attached. Buy enough calico to cut a piece 15cm (6″) larger all round than the inside-back template, plus enough for strips 10cm (4″) wide to fit round the perimeter of the inside-back foam.

**Cover fabric.** The safest way of estimating the amount needed is to make a cutting chart to scale.

☐ Draw an open-ended rectangle with a width to represent the width of the cover fabric.

☐ Mark the piece for the inside back first, using the template as a guide but making it 15cm (6″) larger all round than the template to allow for the depth of padding.

Mark the piece for the outside back panel, using the inside-back template as a guide but making it 2.5cm (1″) larger all round to allow for turnings.

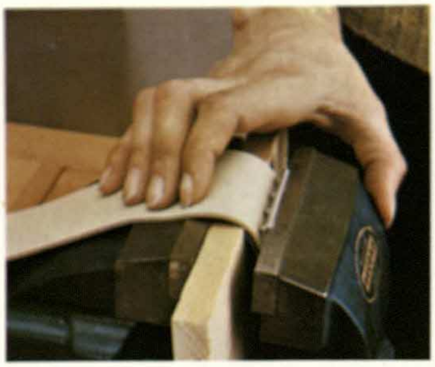
☐ Mark the pieces for the seat cushion with two pieces from the seat template and a welt strip for each side.

☐ Allow extra length for positioning and matching any pattern and for cutting bias strips if you are adding piping, then draw a line to complete the rectangle. Measure the length of the rectangle and convert back in scale to give the required amount of fabric.

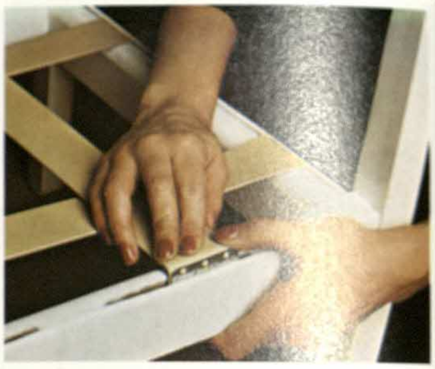
*The show-wood of this fireside chair was stripped of the old varnish and then painted to tone with the new cover. The back of the chair was upholstered with rounded edges.*

Geoffrey Frosh

1. *Folding back the edges of the hessian lining on the inside back.*



2. *Using a vice to fit a clip to the end of the rubber webbing.*



3. *Inserting the clip (shown on the chair photographed in chapter 8).*

4. *Squashing foam for a round edge.*

5. *Fitting foam round the arms.*

## Webbing and lining

**Lining with hessian.** If you are lining the inside back with hessian, mark the centre point on each edge of the hessian and on each edge of the inside back of the frame. Place the hessian on to the inside back, matching the centre points. Temporary-tack it to the frame at each point.

☐ Keeping the grain of the hessian straight, tack it along the centre of the top of the inside-back frame, placing the tacks about 4cm (1½") apart. Smooth it down to the bottom and tack down. Tack the sides in the same way.

☐ Turn back the raw edges of the hessian over the tacks and tack down, putting the tacks in between those underneath (fig.1).

**Fitting rubber webbing.** If rubber webbing must be attached with tacks, follow the method in Upholstery chapter 2, page 434. If the frame has grooves for webbing clips, proceed as follows.

☐ Press one end of a webbing strand on to the teeth of the clip. If you have a vice, place the clip in it and tighten the vice to close the clip over the webbing (fig.2). Alternatively use pliers to close the clip. Repeat at the opposite end of the strand.

☐ Place one clip in position in the groove and pull the webbing until you can insert the other clip in the opposite groove (fig.3).

**Note:** with some styles of chair it may be easier to leave the replacement of the seat springing until the back upholstery is complete, as done on the chair with rounded edges here.

**Jute webbing.** If the back was spanned with jute webbing, replace this to follow the original arrangement, following the method described in Upholstery chapter 1, page 416.

## Backs with rounded edges

**Attaching the foam.** Prepare the foam with calico strips and attach it to the back of the frame, using the method of rolling the edges described for the headboard in Upholstery chapter 5, page 748. Temporary-tack the calico strips along the top of the outside back of the frame, placing the tacks 1.5cm (½") from the outer edge of the frame and about 5cm (2") apart (fig.4).

**Fitting round the arms.** Cut horizontal slits in the calico and foam to the inner edge of the arm and level with the centre of the arms. Squash the foam to fit above and below (fig.5). Tack the calico to the outside back down the sides.

**Attaching the bottom edge.** If the frame has a tack bar—a separate piece of wood above the back rail of the seat—trim the calico strip at each corner so that it can be pulled under the bar and tacked to the outside back. Where there is no tack bar, tack the calico to the inside face of the bottom rail.

☐ When you are satisfied with the placement of the foam, either hammer home the tacks or replace them with staples.

## Calico cover

It is always advisable to cover the foam with calico to give a smooth foundation for the main cover and to help protect the foam.

☐ Using the inside-back template as a pattern, cut out a piece of calico allowing an extra 15cm (6") all round. Place the calico centrally over the foam, take the fabric edges round to the outside back of the frame and secure them with a temporary tack in the centre of each side.

☐ Add more temporary tacks along the centre of the top rail at 5cm (2") intervals to within 5cm (2") of the corners, and smooth the calico down to the bottom.

☐ If the frame has a tack bar, fit the calico round the uprights as for the back corners of a dining chair (Upholstery chapter 2, page 434), and pull it through to the outside back. Temporary-tack along the centre of the rail. If there is no tack bar, tack it to the inside bottom rail as before, to within 5cm (2") of the corners.

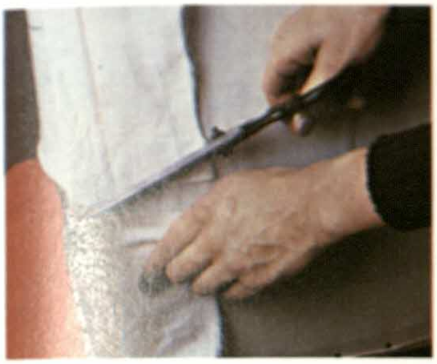
**Fitting round the arms.** To fit the calico round the arms, remove the temporary tacks holding the side edges and fold back the side edges level with the inner edges of the arms. Cut a horizontal slash into the calico level with the centre of each arm from the raw edge to within 1.5cm (½") of the fold. Then make two diagonal cuts up to the fold (fig.6).

☐ Pull the calico tightly round the sides of the frame, using the blunt end of the regulator to tuck the edges of the slash under the slit in the foam as you do so. Temporary-tack the sides of the calico to the outside back.

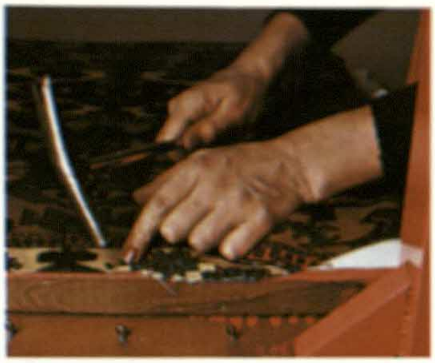
☐ When all the edges of the calico are temporary-tacked and the lining is completely smooth and taut, either hammer the tacks home or replace with staples. Finish each corner in a pleat as for the wall panel in Upholstery chapter 6, page 804.

## The main cover

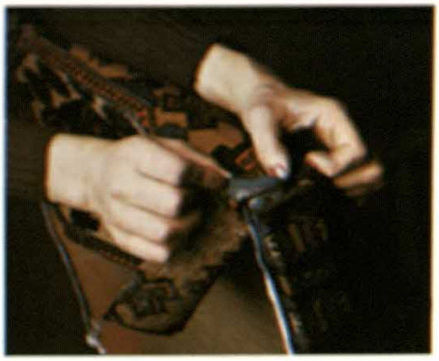
☐ Cut out the fabric as for the calico and place any design centrally.



**6.** *Cutting the side edges of the calico to fit it round the arms.*



**7.** *Folding under the bottom edge of the cover on a frame with no tack bar.*



**8.** *Forming corner pleats at the tops of chairs with rounded edges.*

☐ Attach the fabric as for the calico but placing the tacks 1.5cm (½") in from the outer edge of the outside-back frame.

☐ Slash the fabric at the arms as for the calico and turn under the edges of the slash so that the folds are above and below the arms. Take fabric round to the back of the frame and temporary-tack.

☐ To make a neat finish if there is an unsightly gap behind the arms, cut two pieces of fabric 7.5cm (3") square, matching the fabric design to the part of the fabric above and below the gap if possible.

☐ Release a couple of temporary tacks on each side of the arm and insert the cut square. Fold under its front edge for 1.5cm (½") and place in position behind the arms. Tack along the top and bottom edge. Re-tack the edges of the cover folding under the bottom edge if there is no tack bar (fig.7).

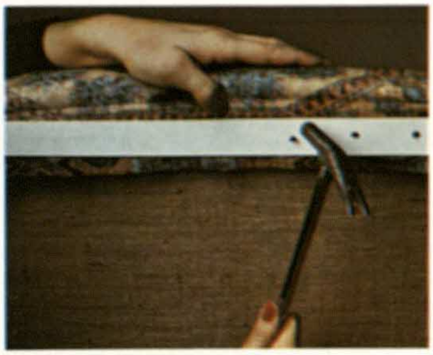
☐ When you are satisfied with the placement of the cover, finish the corners with pleats (fig.8) and hammer tacks home or replace with staples.

**Finishing the outside back.** Cut a piece of fabric for the outside back from the inside-back template allowing 1.5cm (½") all round for turnings. Mark the centre point on each edge. Do the same on the frame and then place the fabric in position, matching the centre points. Fold under the raw edges so that the folds are just inside the edges of the frame and pin to the turnings of the inside-back fabric. Slip-stitch, using strong thread and a curved needle.

☐ If you prefer, the top edge of the outside back can be back-tacked (see fig.9 and also Upholstery chapter 5) and the sides and bottom slip stitched.

## Backs with squared edges

For this design of chair the side edges of foam are not squashed down as for the rounded edges described above, so the foam should be cut only 1.5cm (½") larger than the inside-back template on these edges. 2.5cm (1") should still be added to the top and bottom edges. A photograph of a chair in this style is shown in the previous chapter.



**9.** *Back-tacking the back panel.*

**Fitting the foam.** Prepare the side edges of the foam with the calico strips as for the top of the padded footstool in Upholstery chapter 7, page 1678. Prepare the top and bottom edges of the foam as for chairs with rounded edges.

☐ Attach the foam to the back of the chair, temporary-tacking the calico strips to the outside back.

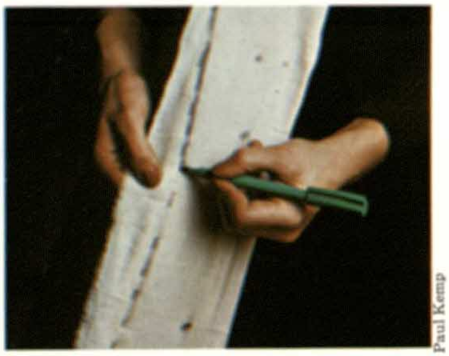
**Calico cover.** Using the inside-back template as a pattern, cut out a piece of calico to cover the foam, allowing 1.5cm (½") extra on the side edges and 15cm (6") at the top and bottom for turnings. For the welt strips cut a 15cm (6") wide strip of calico the length of the side edges of the main section.

☐ Mark the centres on one long edge of the welts and on the side edges of the main section. Pin the welts securely to the side edges of the main section, matching the centre points, to within 15cm (6") of each end.

☐ Keeping the calico with the wrong side out, try it in position on the chair. Temporary-tack the top and bottom edges and the back edges of the welts.

☐ Cut into the welt strips as necessary to fit them round the arms and pin them to fit the shape of the main section at the top and bottom (fig.10). Make any other adjustments. Take the lining off the chair.

☐ Mark the seam lines on both sides, unpin the seams and then use the pieces as a pattern for cutting out the main cover.



Paul Kemp

**10.** *Marking welts for a squared edge.*

☐ Re-fit the pieces of the calico together, machine stitch the seams and press the turnings on to the welts. Trim the turnings to 1.5cm (½") of the machining. Replace the calico, right side out, on the chair and tack.

**Main cover.** Make up the main cover as for the lining but include piping in the seams joining the welts to the main section (For piping see Sewing chapter 6, page 400.)

☐ Attach the outside back panel as for chairs with rounded edges.

## The seat cushion

If the cushion is a rectangle, make the cover for it in the same way as for welted cushions (Sewing chapter 7, page 430.)

If the cushion is not a rectangle, cut the top and bottom pieces of the cover from the seat template described in the previous chapter, keeping the centre lines level with the grain and allowing 1.5cm (½") turnings all round.

☐ Cut the welt strips to fit the edges of the top and bottom pieces and finish as for regular welted cushions.

## Chairs with fixed seats

The seats for this style of chair can be re-upholstered following the method for dining chairs in Upholstery chapter 2, page 434. Fit the fabric round the uprights of the arms at the front of the chair as for the back uprights.

# Drawing in perspective

Design know-how 62

When we look at the things around us what we see depends on our vewpoint—for instance, when we look at a square box, we cannot see all the sides as square at any one time. The box will appear to be an infinite variety of different shapes depending on the angle from which it is viewed. Similarly an object will seem to be many different sizes depending on how near to or far away from it we stand.

## Perspective drawing

In order for things to look realistic in a drawing, they must be drawn as they are seen rather than as they actually are—they must be drawn in perspective.

Perspective is one of the most basic aspects of drawing. A drawing done without perspective looks flat and two-dimensional. A drawing that has been done using perspective looks three dimensional, and therefore looks realistic. Medieval artists realized that objects appeared smaller as they got further away, and used this knowledge by painting objects in the distance proportionately smaller. Nevertheless, their paintings looked rather flat. Now the reasons for our sense of perspective are understood, accurate perspective drawings can be made.

If you draw exactly what you see, you will produce a picture that is perfectly in perspective. It is difficult however, to draw what you see, and rules of perspective to follow will be a help. Here, some of the terms used when talking about perspective are explained.

**The station point.** No accurate perspective drawing can be made unless the person doing the drawing remains in the same place all the time. Once he moves from his original spot, the whole perspective of the drawing will change. A perspective drawing must be done from one observation point only. This point is called the station point.

**The horizon line** is always level with the eye level of the observer, however high or low he stands, or whatever direction he looks—north, south, east or west.

All objects above the horizon line are viewed from below and vice versa.

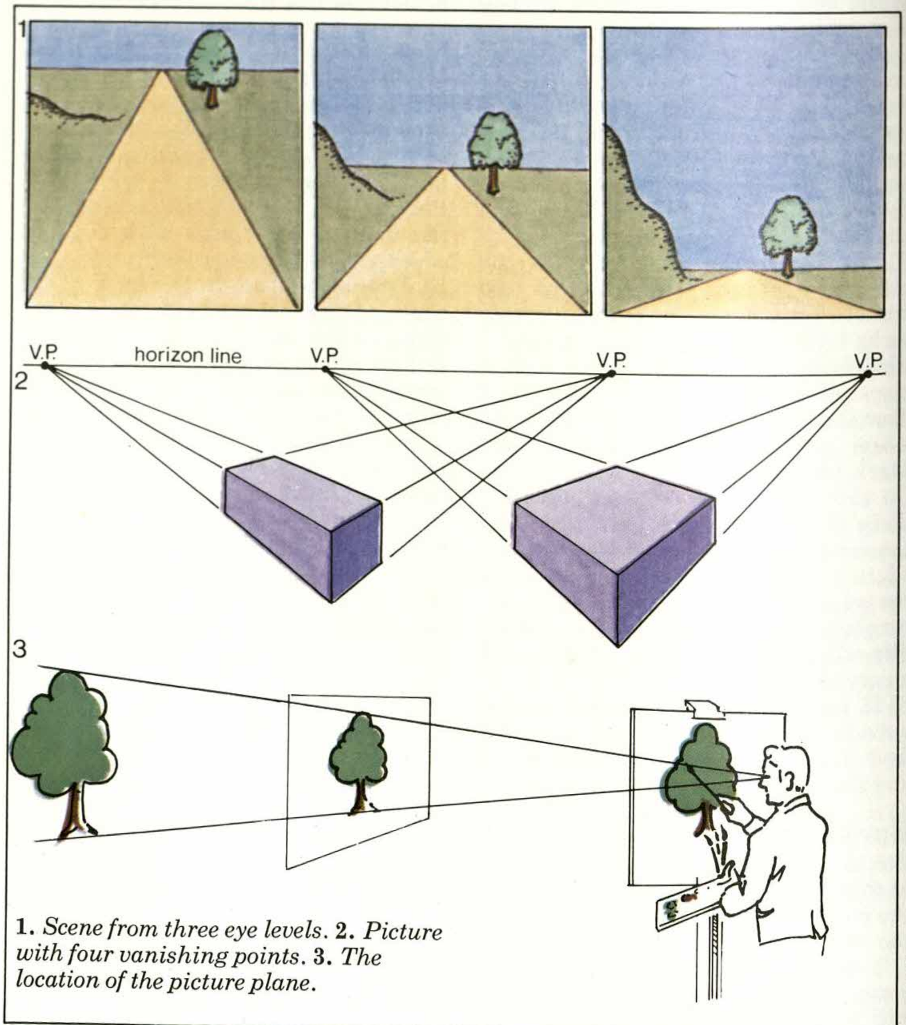
Fig.1 shows how the same landscape can appear different when the eye level changes. Notice also how the level of the horizon line changes depending on the eye level. The horizon line may not always be visible, but it should still be drawn lightly across the picture to help with the rest of the drawing.

**The vanishing point.** Look again at fig.1. You will notice that although the drawings give the impression that the road has parallel sides, the sides are not drawn as parallel, but converge at a point on the horizon line. The point at which these lines converge is called the vanishing point.

In perspective drawings, all parallel lines are drawn so that they converge at a vanishing point on the horizon. These lines may not actually reach the horizon, but they should be drawn so that if they were extended to the horizon they would meet at a point. There is usually more than one vanishing point in a picture, as there is usually more than one set of parallel lines. Fig.2 shows a drawing with four vanishing points for the four different sets of parallel lines.

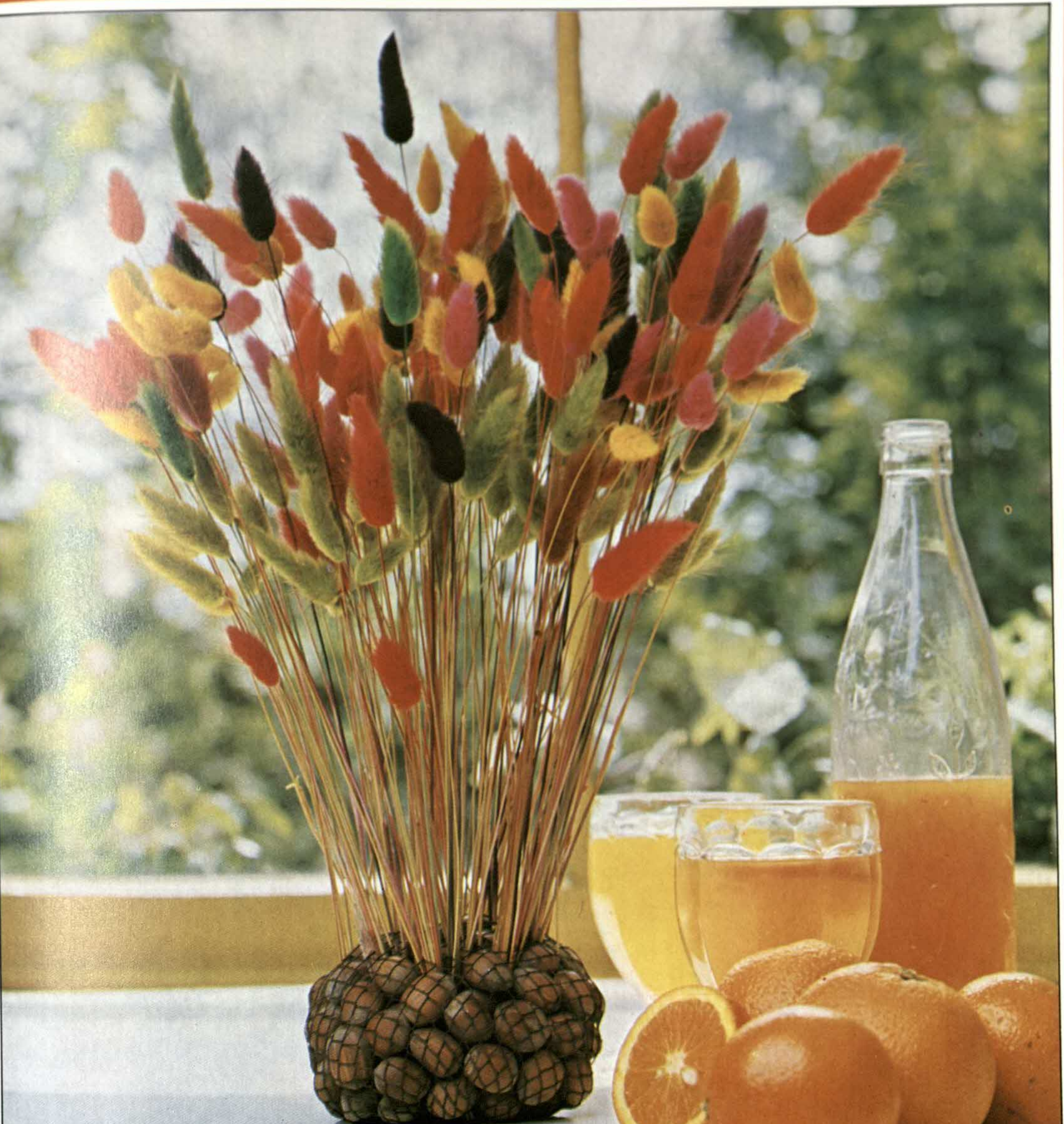
**The picture plane** is an imaginary vertical surface between the artist and his subject, it corresponds to the surface of the artist's canvas or paper. Look at fig.3 and you will see the picture plane and the actual picture on two different surfaces showing how the drawing of the tree fits in with the lines of vision to the tree. The picture plane is of particular relevance when making drawings using the plan projection system which is explained in the next chapter.

**Experiment.** Using a photograph out of a magazine which has lots of straight lines, paste the picture on a large piece of paper. Using a pencil and ruler extend all the straight lines in the picture to find the vanishing points and the horizon line of the picture.



**1.** *Scene from three eye levels.* **2.** *Picture with four vanishing points.* **3.** *The location of the picture plane.*

Paul Williams



Neil Lorimer

*Dried flowers give lasting enjoyment—so display them in this effective holder for a cluster of colour.*

# Creative ideas 62

**Hair-net flower holder**

A hair-net and a pound or two of hazelnuts are the unlikely materials needed to make an effective holder for dried flowers. If you wish to make a holder for fresh flowers in a vase substitute marbles or pebbles for the nuts.

Pack the nuts tightly into the hair-net until you have the desired size. Then twist the rest of the hair-net until there is no slack around the nuts. Tie a piece of string tightly around this twist of hair-net, close to the filling, and turn the holder upside down.

As the stems of dried flowers are very fragile, when you place them in the hair-net slide them gently into the spaces between the nuts.

The completed flower holder will look even prettier if placed in a sunny corner of your kitchen.

# Bookbinding: section sewing

Paper 44

Apart from case binding, which is described in the previous chapter, the other most important part of the bookbinder's craft is sewing. If you look at the heads of machine-bound hardback books you will generally find that the pages are divided into sections. If you open the book in the centre of one of the sections, you will see the sewing threads.

This chapter explains how to sew sections together for case binding, a technique which is suitable for books and magazines which have been 'wire-stitched' (stapled) into sections, but not for books made up of single leaves glued together at the spine.

You can sew several pages together to make a single section, which can then be case bound to form a booklet. This could be filled with poems, quotations, sketches, or pressed flowers, to make a unique and very special gift.

## Tools and materials

As well as the tools and materials mentioned in the previous chapter, you will need several more, which are also obtainable from bookbinder's suppliers and general shops.

**Dividers.** Spring dividers have a screw adjustment which can be set. They are used to measure the distance between the reinforcing tapes on the spine.

**Needle.** Bookbinder's needles are strong and sharp, with large eyes. Carpet needles are also suitable.

**Saw.** For cutting into the spine.

**Tape.** This is used to reinforce the spine and keep the sewing sections firmly in position. It also helps fasten the sections to the covers. Stiffened linen India tape is ideal but any stiff tape not more than about 1.5cm (½") wide can be used.

**Thread.** Unbleached linen thread.

**Strawboard.** You will also need two sheets of 910gsm (2lb) board, measured as described in the previous chapter on bookbinding.

# Binding magazines

Binding magazines into a volume stores them for reference and provides an excellent introduction to section sewing. Do not bind together more than about eight thick magazines or 16 thin ones, or the volume will be too heavy and unwieldy.

☐ Very carefully remove the wire staples from the magazines without tearing the paper.

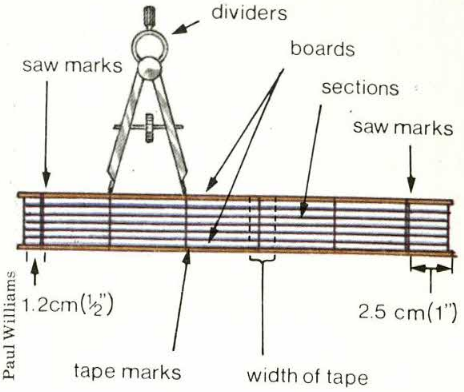
☐ Put the magazines in sequence with the first issue on top. Unless otherwise specified, keep the magazines in this order throughout the sewing.

☐ Using the steel ruler, set square and shoemaker's knife, cut the boards carefully to size as described for case binding (Paper chapter 43, page 1714).

☐ Place one board on the table or work surface. Put the magazines on the board, and the other board on top of the magazines.

☐ Picking up the magazines and boards firmly with spines facing down, gently knock the spine edges squarely on the table to level them into a neat volume. Lay the volume carefully on the table with a heavy weight on it.

☐ With a pencil, mark about 1.2cm (½") in from the head of the spine and about 2.5cm (1") in from the tail. Using the dividers, divide the remainder of the spine into five equal parts (fig.1). It may be easier to make these divisions equal if you alter the measurements at head and tail slightly, but the head measurement should always be the smaller.



Paul Williams

1. *Marking up the spine edges.*

☐ Make a tiny saw cut (to hold the knots) in the sections at the head and tail marks (fig.1).

☐ Placing the tape centrally over each

*The case for your volume would look attractive if covered in fabric to match décor. Fabric by Liberty & Co Ltd.*

Kim Sayer

pencil mark, make another mark either side of the tape, so that the exact tape widths are indicated along the spine.

### Making a sewing frame

A sewing frame consists of a wooden board attached to two vertical strips of wood which are, in turn, attached to a cross-piece, as shown (fig.2a). It is essential for sewing together several sections of a book, or several magazines, accurately. The sewing frame used by bookbinders today is practically the same as those shown in early 16th-century prints of binders. You can improvise your own quite easily.

**You will need:**

One piece of plywood or chipboard 36cm x 25cm (14″x 10″), about 13mm (½″) thick.

A strip of softwood 25mm x 25mm (1″x 1″), 60cm (2′) long.

4 L-shaped brackets with appropriate screws.

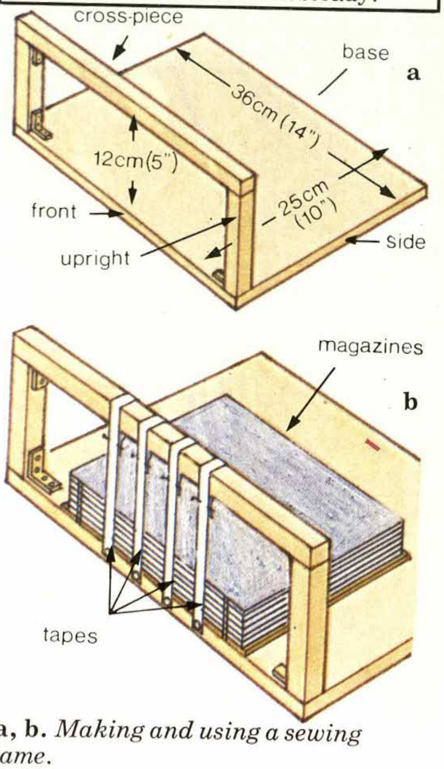
Screwdriver, saw, pencil.

**To make the frame**

☐ Saw the softwood strip into three lengths, two of 12cm (5″) and one of 36cm (14″).

☐ Join the three strips as shown (see fig.2b), with the longest as the cross-piece, placing the brackets inside the four corners.

☐ Join the strips to the plywood base with the corner brackets. The frame should be firm and steady.



**2a, b.** *Making and using a sewing frame.*

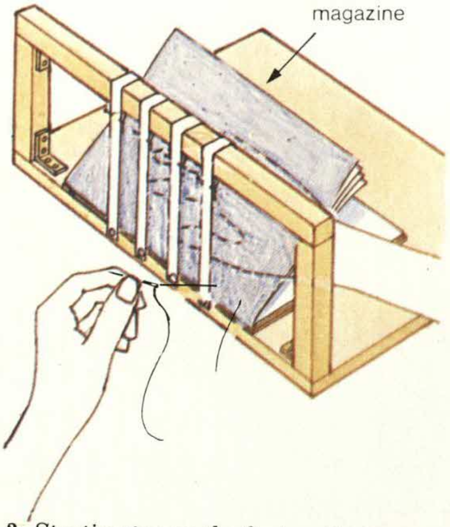
### Sewing the sections

Before the magazines are sewn together, the tapes must be placed in position. Sewing is done around the tapes: the needle should never pass through them.

☐ Remove the weight and top board and pick up the volume carefully, keeping the tape marks aligned. Leave the lower board in position.

☐ Place the volume on the sewing frame with the spine lying along the front edge (fig.2b).

☐ Cut four 25cm (10″) lengths of tape. Fix to the plywood with drawing pins at intervals exactly corresponding to marks on the spine (see fig.2b). Take the tapes up over the cross-piece and pin them taut.

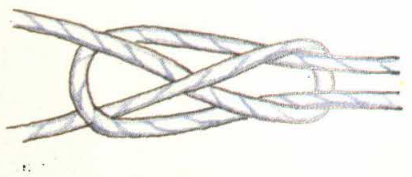


**3.** *Starting to sew the first section.*

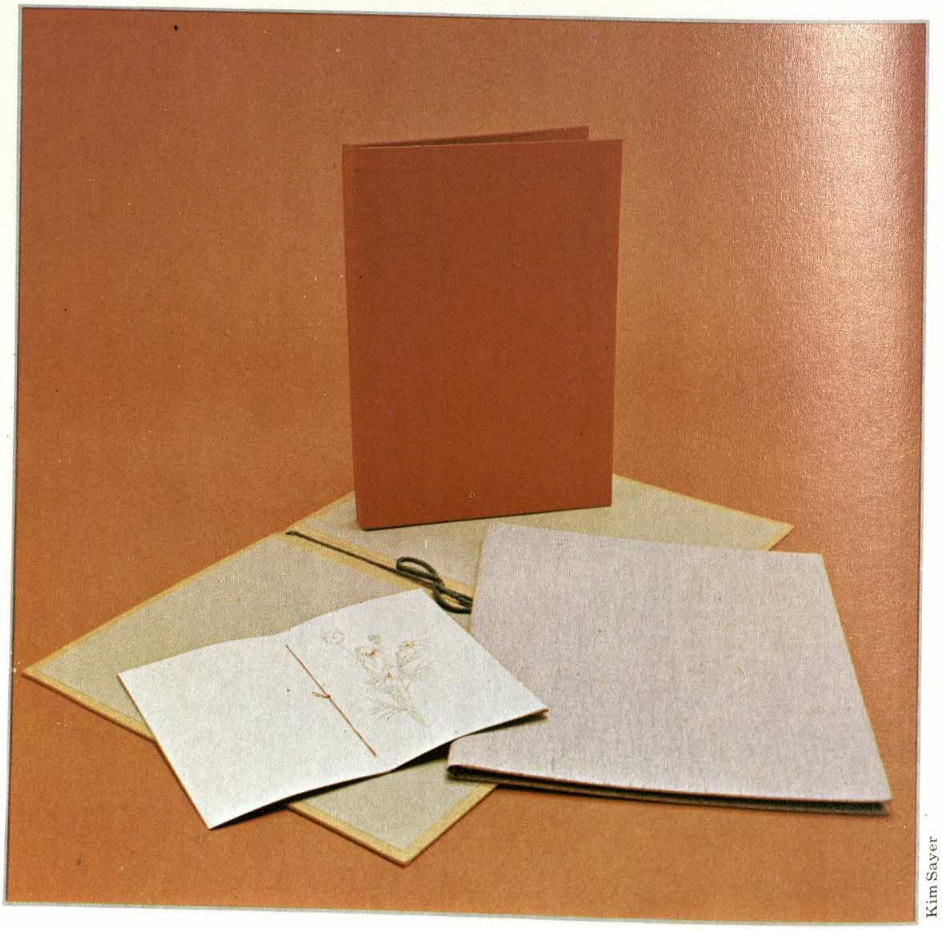
☐ Take all but one of the magazines off the sewing frame, leaving the bottom one in the frame. This magazine is the first section to be sewn.

☐ Using needle and thread described, start sewing this section at the saw mark from the tail end of the spine. Put one hand into the centre of the magazine and thread the needle through from the outside (fig.3). Leave about 5cm (2″) of thread hanging outside the magazine.

**Note:** While you are sewing the sections you will almost certainly run out of thread. When this happens, join to a new piece with a weaver's knot (fig.4) inside the section. Join the thread in good time, about 5cm (2″) before it runs out.



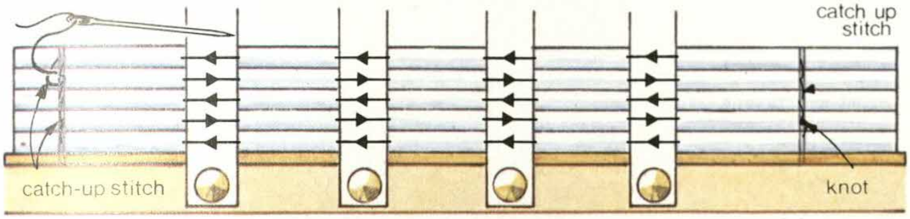
**4.** *Join threads with a weaver's knot.*



Kim Sayer

☐ Pass the needle out beside the first tape and pass it back into the centre of the magazine on the other side of the tape. Continue sewing along the length of the magazine to the saw mark, keeping the thread taut.

☐ Place the next magazine (second last in the volume) front cover uppermost on top of the sewn one, aligning its marks with the tapes.



5. *The direction in which the thread is sewn alternates with each section, as indicated by the arrows. The lower two magazines are knotted together.*

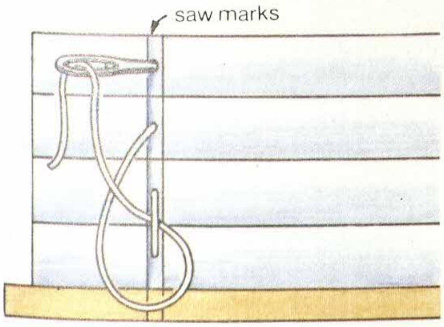
☐ Pass the needle in at the head end and sew the length of the magazine as previously described.

☐ Place the next magazine (third last in the volume) front cover uppermost on top of the other two.

☐ Following fig.5 fasten the lower two magazines together with a knot, then continue sewing the third magazine as the others.

☐ When you get to the head of the third magazine, join it to the second using a catch-up stitch (fig.6).

☐ Sew all the magazines for the volume together, fastening them to each other at head and tail, using catch-up stitches.



6. *Join the third magazine to the second using a catch-up stitch. The saw marks at each end of the sections hold the stitches in place.*

*Left: a case for a volume of sewn magazines (upright), a single-section booklet, showing the threads knotted in the centre, and two single-magazine folders for television guides.*

☐ When the final magazine (the first in the volume) has been sewn, bring the thread outside the spine and knot it to the adjoining magazine.

☐ Unpin the tapes and gently pull ends which were pinned to the frame base through the stitching until they are about 4cm (1½″) from the edge of the spine. Cut the longer ends so that the tapes also protrude 4cm (1½″) from the other edge.

## Case binding the volume

**You will need:**

Bookcloth.
Mull or bandage at least 5cm (2″) wider than the spine.
End-papers. A strong grade is needed for volume binding.
Brown paper the width of the spine and 2.5cm (1″) less than the height.
PVA adhesive.
A few sheets of waste paper to protect surfaces while gluing.
Glue brush, bone folder, scissors.

Follow the instructions given for case binding (Paper chapter 43, page 1714), except at the following stages.

☐ When measuring the bookcloth allow, in this instance, about 6mm (¼″) distance between the main boards and the spine piece, since the joints need to be bigger for a volume with a wider spine.

☐ Stick the mull over the tapes to the spine only. When the glue has dried, reinforce the mull by gluing on a piece of brown craft or wrapping paper the width of the spine and 1.2cm (½″) shorter at head and tail.

☐ The tapes and mull are glued down between the boards and the parts of the end-papers which are glued to the boards. Finish as described.

# Single-section booklet

Now that you have seen how to sew several sections together and to case bind, you can make your own booklet from blank sheets of paper, in which you can write or draw. The example given here has pages made of cartridge paper.

**You will need:**

Tools and materials as listed for case binding.
10 sheets cartridge paper, about 20cm x 30cm (8″x 12″), or smaller, cut to precisely the same size.
Bookbinder's needle and thread.

## To make the section

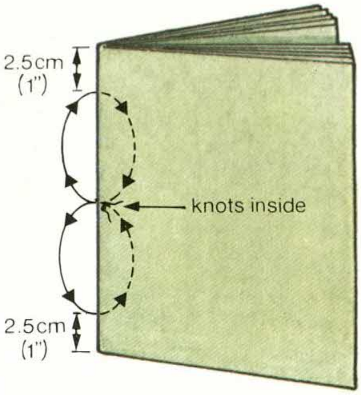
☐ Align the sheets of paper and fold them in half to make the central fold, with the sheets one inside the other.

☐ Mark the mid-point of the fold and push the needle and thread through it from inside the booklet, leaving about 5cm (2″) thread loose.

☐ Make the next stitch about 2.5cm (1″) from the head of the booklet.

☐ Sew through the central hole again, then make another stitch 2.5cm (1″) from the tail edge.

☐ Bring the thread back to the central hole and knot the two loose threads together, then trim the ends (fig.7).



Paul Williams

7. *Method of stitching a small single-section booklet, using three holes.*

## Making the case

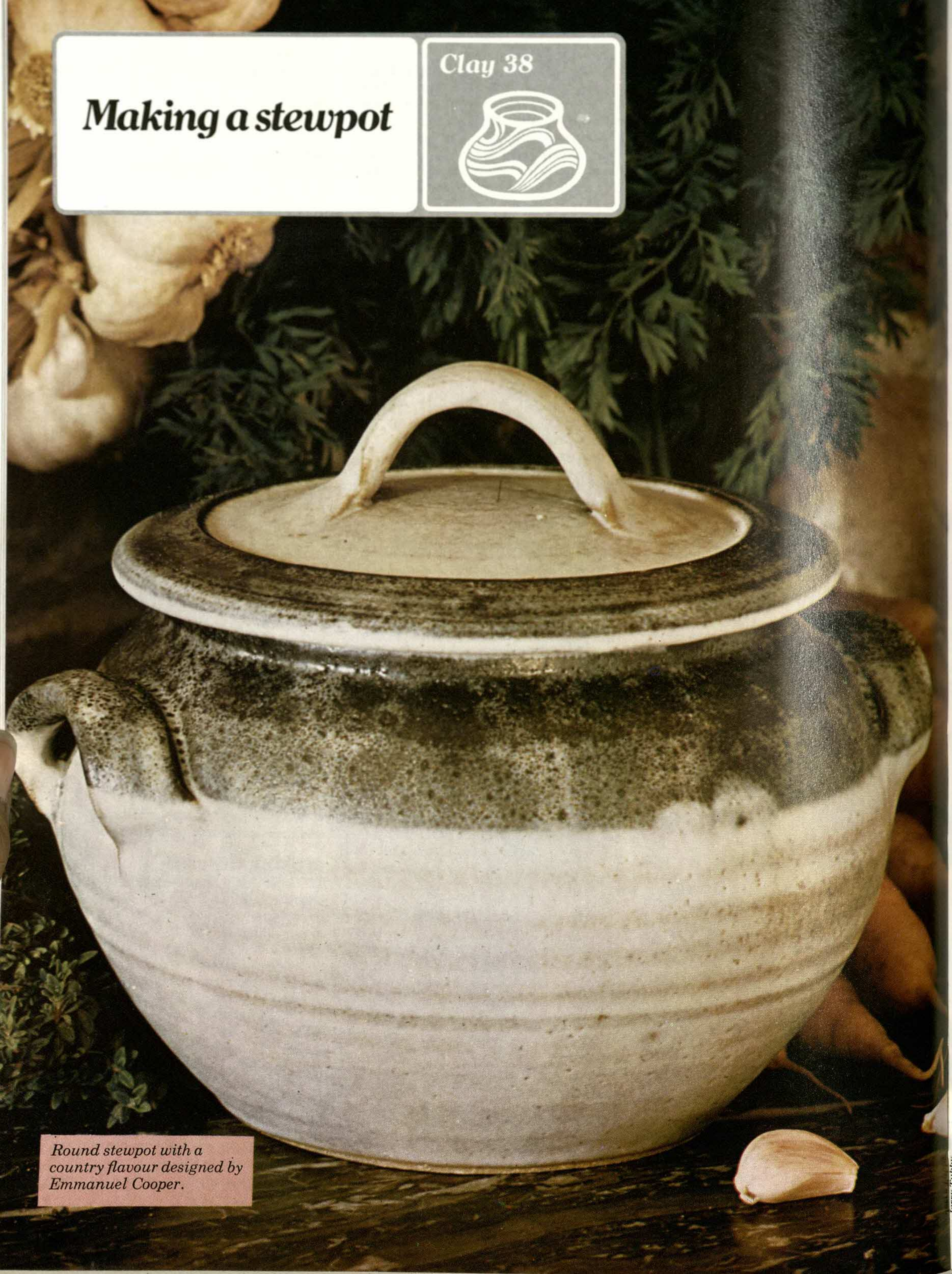
The case for a single-section booklet—this also applies to theatre programmes or leaflets as well as to the hand-made booklet—is made in almost exactly the same way as that for an ordinary book. However, it does not have a spine board because it is too narrow to need one.

☐ Stick a strip of mull about 5cm (2″) wide down the inside centre of the bookcloth, leaving a gap of about 4cm (1½″) between the boards.

☐ Glue the whole of the outer sheet (two pages) of cartridge paper to the covered boards as end-papers, but do not glue the spine of the booklet to the spine piece. The central 4cm (1½″) of the booklet must not be stuck.

☐ Keep the book and cover folded until the glue is dry.

# Making a stewpot



*Round stewpot with a country flavour designed by Emmanuel Cooper.*

The round, old-fashioned stewpot is quite different both in character and function to the flat casserole described in the previous chapter. But all the basic design considerations remain the same. Stability of shape, ease of handling and cleaning, suitability of size and so on, are all qualities which determine the success or failure of the finished pot (see Clay chapter 37, page 1658).

## The round stewpot

The pot made here is a medium-sized one, 15cm (6″) high and 17.5cm (7″) across at its widest point, with a capacity of about 1.5 litres (3 pints). However, the same design works very well in larger or smaller versions.

Because the actual process of making the pot will probably take up all the attention of the inexperienced potter, it is really only when the technique has been mastered that consideration can be given to the finer points of form. Bear in mind that, as a general rule, the widest part of the shoulder should be nearer the top than the bottom. In a successful pot the shape seems to spring from the base and flow up to the widest point near the top.

Of course, a shape which is pleasing to one potter may look heavy and dull to another, so personal taste plays a large part. But, whatever you do, always beware of creating a pot with a sagging belly.

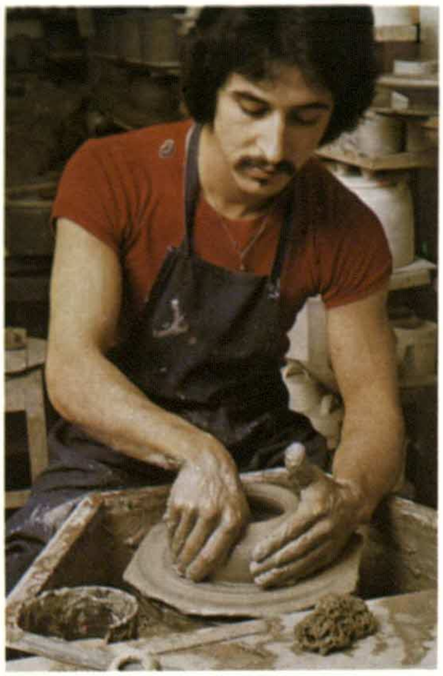
This round shape is physically stronger than the flat casserole shape, and some potters find they can throw it straight on to the wheelhead and lift it clear when it is finished without undue distortion. This can be done by using clay which is highly plastic and has great handling strength when thrown. This strength can be increased by using the clay stiffer than usual and throwing more quickly so that less water is taken up by the body. However, for the inexperienced potter such methods are premature, and it is advisable to work on a batt.

Work with clay of a medium-hard consistency because if it is too soft it will collapse easily. Prepare the clay as usual, but remember to use a body with a high thermal shock resistance, see Clay chapter 37, page 1658.

### The body

**You will need:**

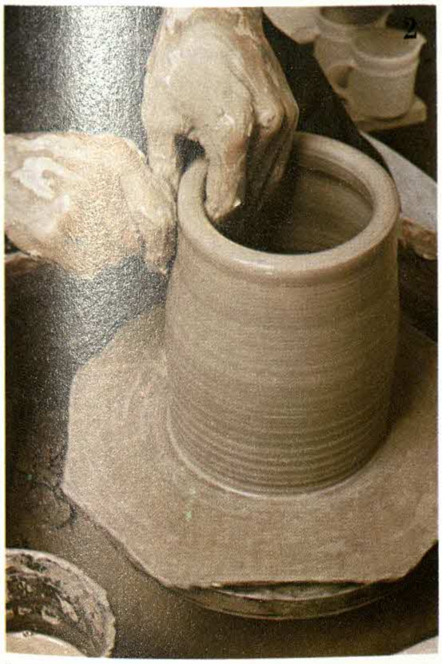
1½kg (3lb) prepared throwing clay.
Batt.
Clay to fix the batt to the wheel.
Cutting wire.
Sponge.
Bowl of water.
Pointed wooden tool.
Callipers.



☐ Fix the batt to the wheel as described in Clay chapter 35, page 1545.

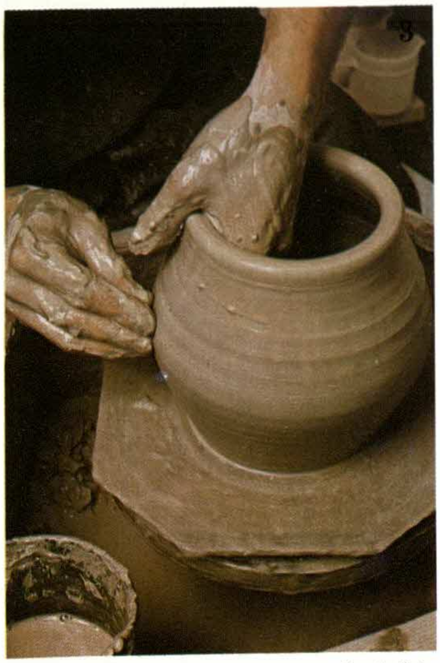
☐ Place the clay on the batt and centre it in the usual way with a medium-fast wheel speed.

☐ Leave a base width on the lump of about 10cm (4″) and open up the ball to form a basic cylinder shape (fig.1). The round form is made more or less from a straight-sided cylinder thrown up with a thickened rim. This rim gives the pot added strength.



☐ Compress the inside of the base at this stage with the flat of the fingers as described in Clay chapter 37.

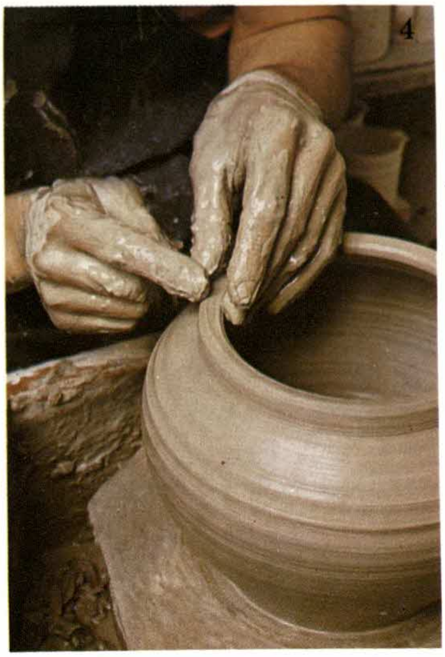
☐ Bring up the walls of the cylinder until they are about 17.5cm (7″) in height (fig.2).



☐ When the cylinder has reached this height, use the fingers of the left hand to throw out the walls to form the round shape, supporting the clay with the right hand (fig.3). This process should be done slowly.

At this stage you should aim for a full, swelling form.

☐ Leave a neck on the pot of about 1.2cm (½″) to support the lid (fig.4).



☐ To finish off the body, trim off the surplus clay around the base with the pointed wooden tool.

☐ Check and note the size of the neck opening.

☐ Cut underneath the pot with the cutting wire and lift it from the wheelhead on the batt.

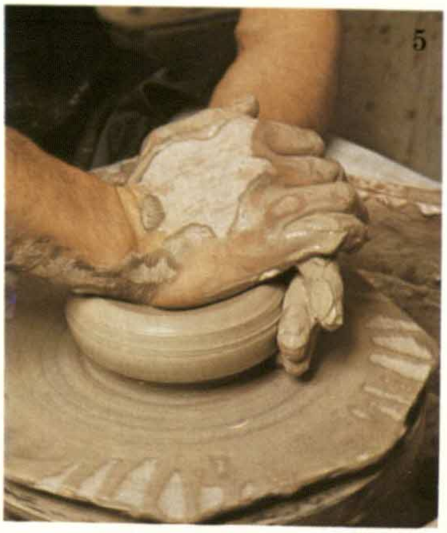
Nelson Hargreaves

Jerry Tubby

## The lid

This is a cap lid, with a flange which sits inside the neck of the pot to hold it in position.

**You will need:**
700gm (1½lb) of prepared throwing clay.
All the equipment listed for the body.

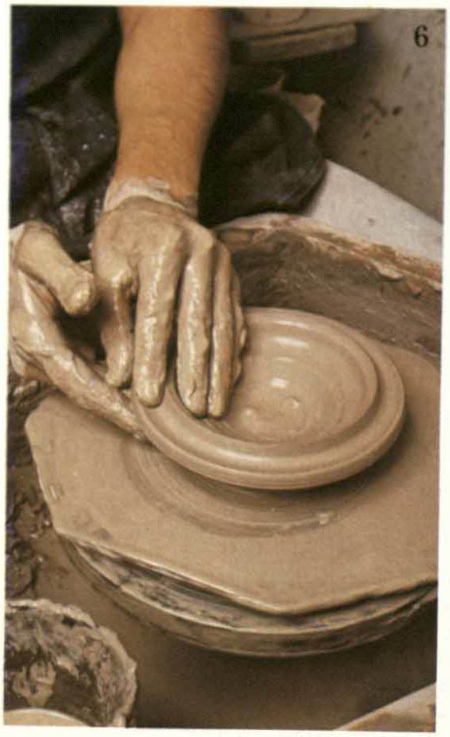

5

☐ Fix the batt to the wheelhead.

☐ Centre the clay on the batt in the usual manner.

☐ Open up the clay with the heel of the right hand to form a simple bowl shape. Leave a base of about 10cm (4") (fig.5).

☐ To make the flange and rim, support the clay underneath on the outside with the right hand, and press downwards on the top edge with the fingers of the left hand. Gradually the flange will form (fig.6).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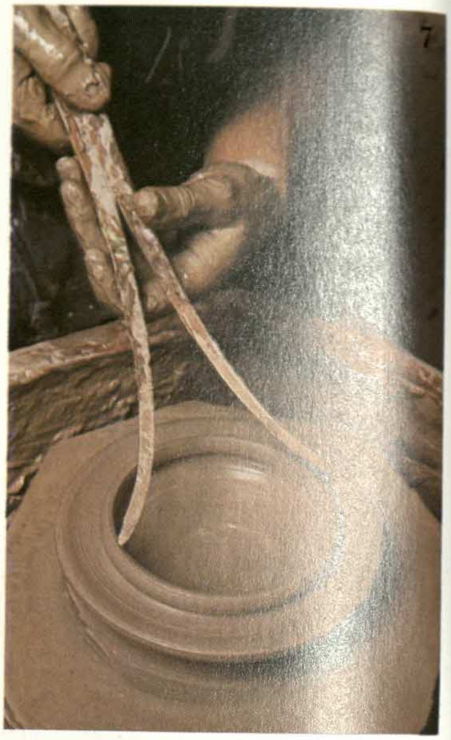
Keep the rim thicker than may seem necessary at first. It can always be thinned later.

Ideally the thickness of the rim of the lid and the pot should be much the same. The flange on the lid should be at least 1.2cm (½") deep and should match the internal measurements of the pot.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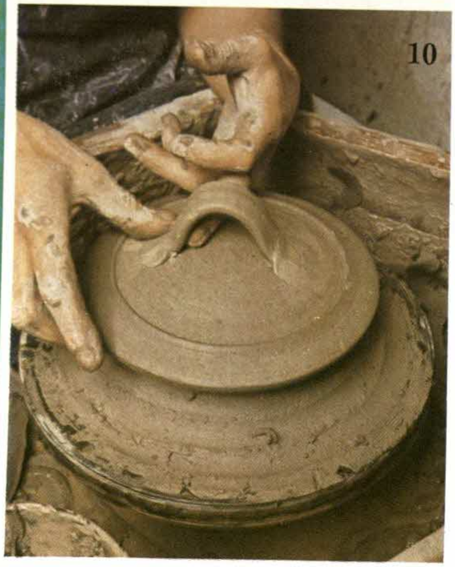
☐ Use the callipers to check the measurements and adapt as necessary (fig.7).

☐ Use the fingers of the right hand to support the lid underneath and also to make the border of the lid flat (fig.8).

This border should be sufficiently large to overhang the mouth of the pot by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Nelson Hargreaves

## Lid handle

When turned, the lid should be fitted with a strap handle in the usual way (fig.10).

Be sure to create a crisp arch which, when fired, will be sufficiently large to give a good grip. Avoid sagging arches which will sag even further during firing.

## Pot handles

Pull strap handles and attach them to the pot exactly as described in Clay chapter 37, page 1658.

These handles need not be quite so large as those on the flat casserole, but their placing is very important. As a general guide, they should be fixed slightly above the widest point on the shoulder, and directly opposite each other, not only to balance the pot but for a neat finish as well.

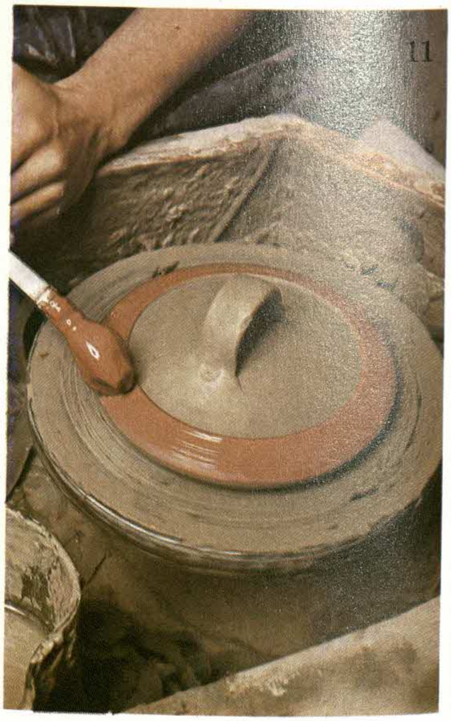
## Slip decorating

The flat casserole in Clay chapter 37 was decorated with incised lines drawn on the surface with a comb. This stewpot is decorated with coloured clay slip which is simple to apply, and provides pleasant contrasts—see Clay chapter 16, page 704.

**You will need:**
Bucket of dark firing slip.
The stewpot at leather-hard stage.
Paintbrush.

☐ Paint the slip on the border of the lid. Several coats will be necessary (fig.11).

Be sure to allow each coat to become leather-hard before applying the next.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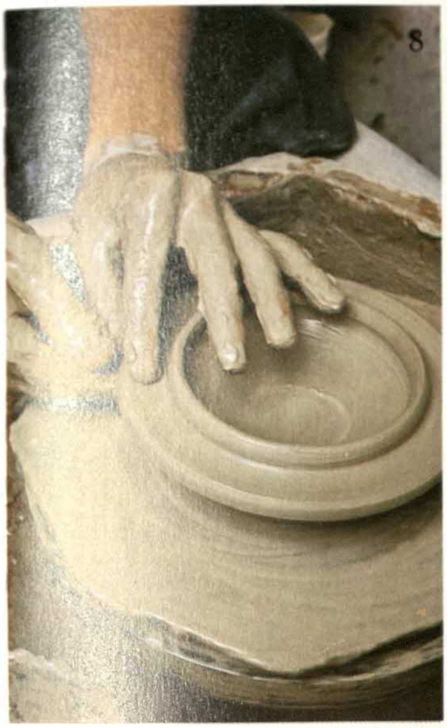
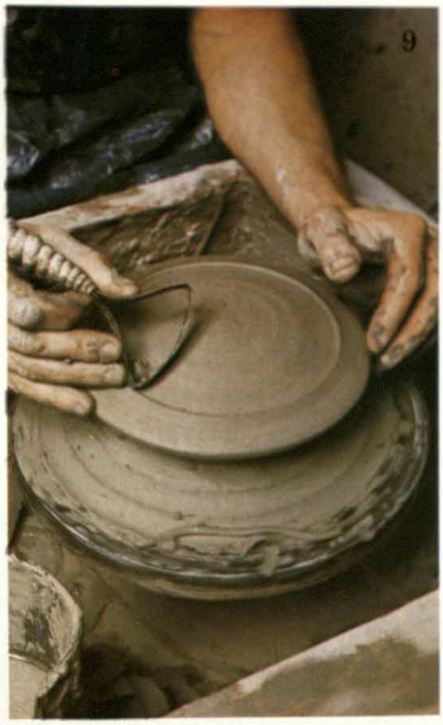
☐ Dip the top part of the pot, up to the top of the handles, into the slip (figs.12 and 13).

Do not dip the whole of the handles in the slip because clays which become





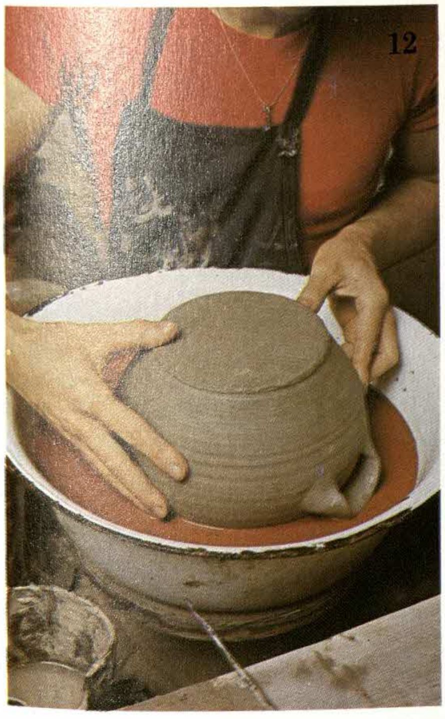
about 1.2cm ($\frac{1}{2}''$) but no more.

☐ When the lid is complete, cut underneath it with the cutting wire.

☐ Lift the batt and lid free of the wheelhead.

### Turning and finishing

The main body of the pot, if well thrown, will need little or no turning. The bottom of the pot can either be turned smooth or a foot ring can be cut so that the bottom of the pot can be glazed, see Clay chapter 36, page 1570. When turning the lid on a chuck, remember that the idea of throwing this shape is to leave the border unturned and turn the dome-shaped part of the lid. This gives the surface a pleasing contrast between rough and smooth textures (fig.9).



wet on both sides are liable to bloat and may even collapse.

☐ Set the finished pot to one side to dry.

## Glazing cooking pots

Glazing has already been discussed in general in Clay chapter 19, page 842, But when choosing glazes specifically for cooking pots there are certain considerations to be borne in mind.

Few cooks will welcome cooking pots covered with pin-holed, pitted glazes which stain easily. Such glazes often become ugly and, far from enhancing the food, detract from its appeal. Glazes should be smooth with a relatively even surface which can easily be cleaned. For earthenware potters, the tin majolica-type glaze is ideal. It is smooth and clean looking, and lends itself to many sorts of decorative treatment. Such glazes can be purchased ready prepared or can be made up very easily. They must, however, be applied evenly.

For the stoneware potter, the choice of glaze is much wider, ranging from speckled opaque whites, achieved by adding about 8% of tin oxide to a basic transparent glaze, to decorative matt glaze, made by increasing the clay content and adding titanium dioxide to a basic glaze. However, the risk of staining these matt surfaces is considerable. Attractive dolomite matt glazes, either over a dark body or over dark firing slips, are a firm favourite.

More traditional potters may prefer a rich black-brown tenmoku, with a small area of the body left unglazed and darkened by rubbing in a small quantity of iron dioxide. This is a sensible choice.

A pleasant, black-brown glaze can be achieved by adding 5% of iron oxide, 5% of manganese oxide and 5% of china clay to a basic transparent glaze.

On the whole it is best to avoid really bright coloured glazes which, instead of forming a pleasant and complementary background to the food, serve only to compete with it, and probably win!

### Safety note

It is most important to note the comments made in Clay chapter 9, page 842, relating to lead release. Hot cooking juices can cause lead and other toxic materials to leach from certain glazes. It is vital to choose, and use, glazes correctly if you do not want to kill your friends.

British Standard specification BS4860 part 2 details permissable limits of metal release from cooking ware.

If you are in any doubt, consult your glaze supplier.

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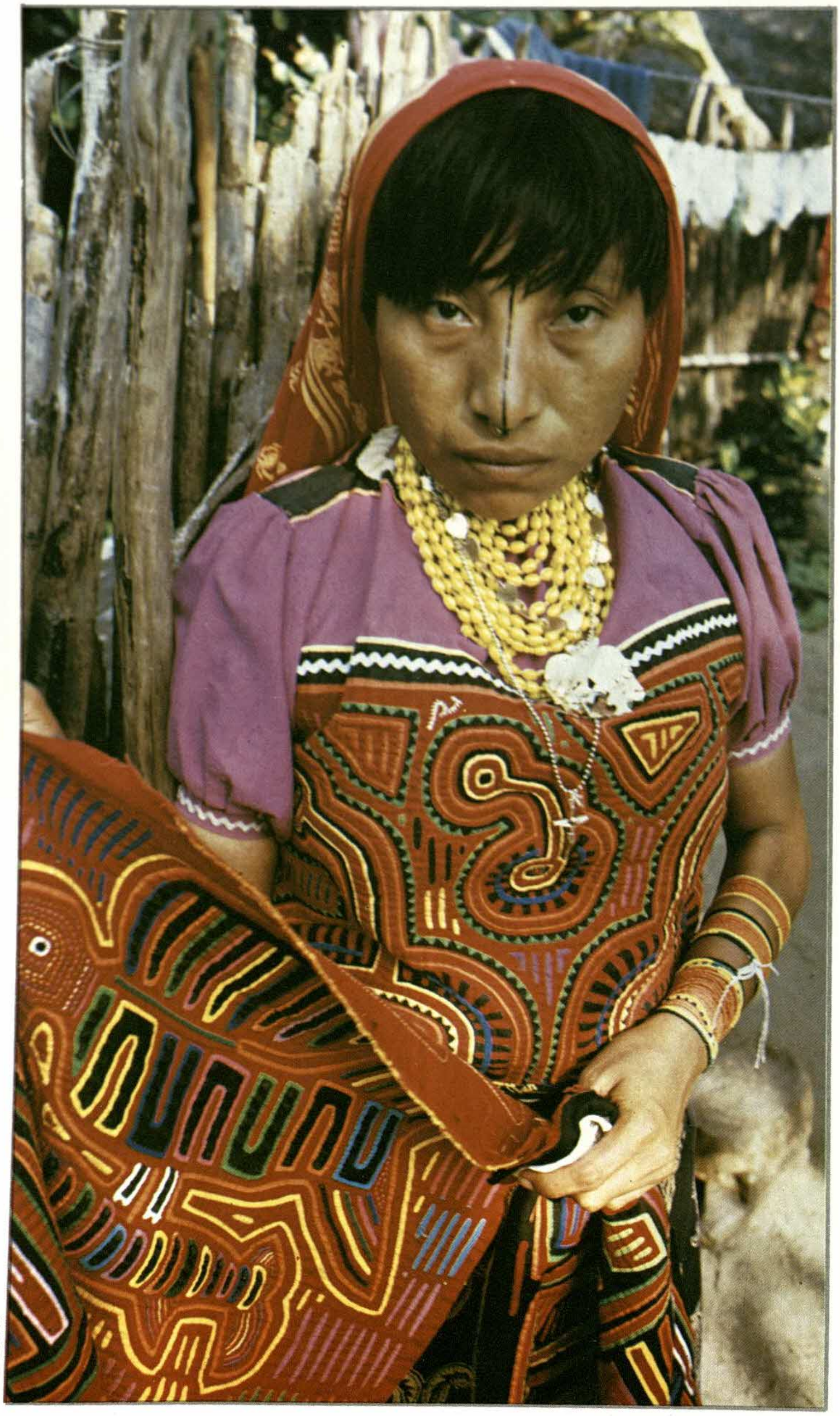
# San Blas appliqué

Cloth — appliqué 5



Colin Jones

San Blas or mola work—appliqué in reverse—is worked with great skill by the Indian women of the San Blas islands, off the coast of Panama. The appliqué is used to decorate their short-sleeved blouses known as molas. When the Indians first moved to the islands in about 1850, the molas were simple, and made only of dark blue material with a single narrow band of coloured fabric around the bottom of the mola. The narrow band became wider and more intricate in design, eventually forming the major part of the mola. Later when traders brought fabrics of brighter colours to the islands the designs became even more elaborate, involving up to five or six layers of fabric in as many colours. Reds, oranges, greens and blues all vibrated together in one design.

The primitive and gay designs reflect life on the islands, and are often based on plants, animals and people. Similar designs are to be found on wooden figures, called 'nuchus', carved by the San Blas men.

Molas are an important status symbol among the Indians and in some places it is considered improper for a San Blas Indian girl to be married without possessing at least twelve or more unworn molas as part of her dowry.

**Uses.** This appliqué technique is ideal for fashion where rich bold effects are required. It would be striking worked as a border around the bottom of a skirt, or on an evening cloak. A small waistcoat lavishly worked in San Blas appliqué would be warm and very decorative. On curtains and cushion covers or bedspreads and wall hangings, mola appliqué would look particularly dramatic.

**Method.** This appliqué technique is more a method of cutting away than applying pieces of fabric. Several layers of different coloured fabrics are placed together, then parts of the top layers of fabric cut away to reveal a section of the colour below.

Five layers at the most are workable, but experiment with two or three layers of fabric to start with, and introduce any extra colour by pushing small pieces of fabric into holes in the design. On large areas such as a skirt, where working with several layers would be impossible, pieces of fabric can be appliquéd in the traditional way (see Appliqué chapter 2, page 350) then the small areas within cut away and neatened.

*Left: a San Blas islander proudly displaying her work. The designs can be abstract or primitively realistic. Right: a bird motif, adapted from a Mexican pattern, is ideally suited for San Blas appliqué on a box or on a garment. Designer Eleanor Harvey.*

Kim Sayer

When cutting out the design always cut out shapes smaller than their finished size to allow for the turnings which are folded under and stitched down.

Choose a light-weight fabric with a firm, close weave such as cotton poplin or lawn. Heavy fabrics will fray more easily and the turnings will be bulky but felt, which requires no turnings, is particularly well suited to cushions and similar objects.

## Bird motif

The bird motif on the previous page was adapted from a Mexican pattern and is used on the lid of a box, but the design would be equally suitable for a garment.

**You will need:**

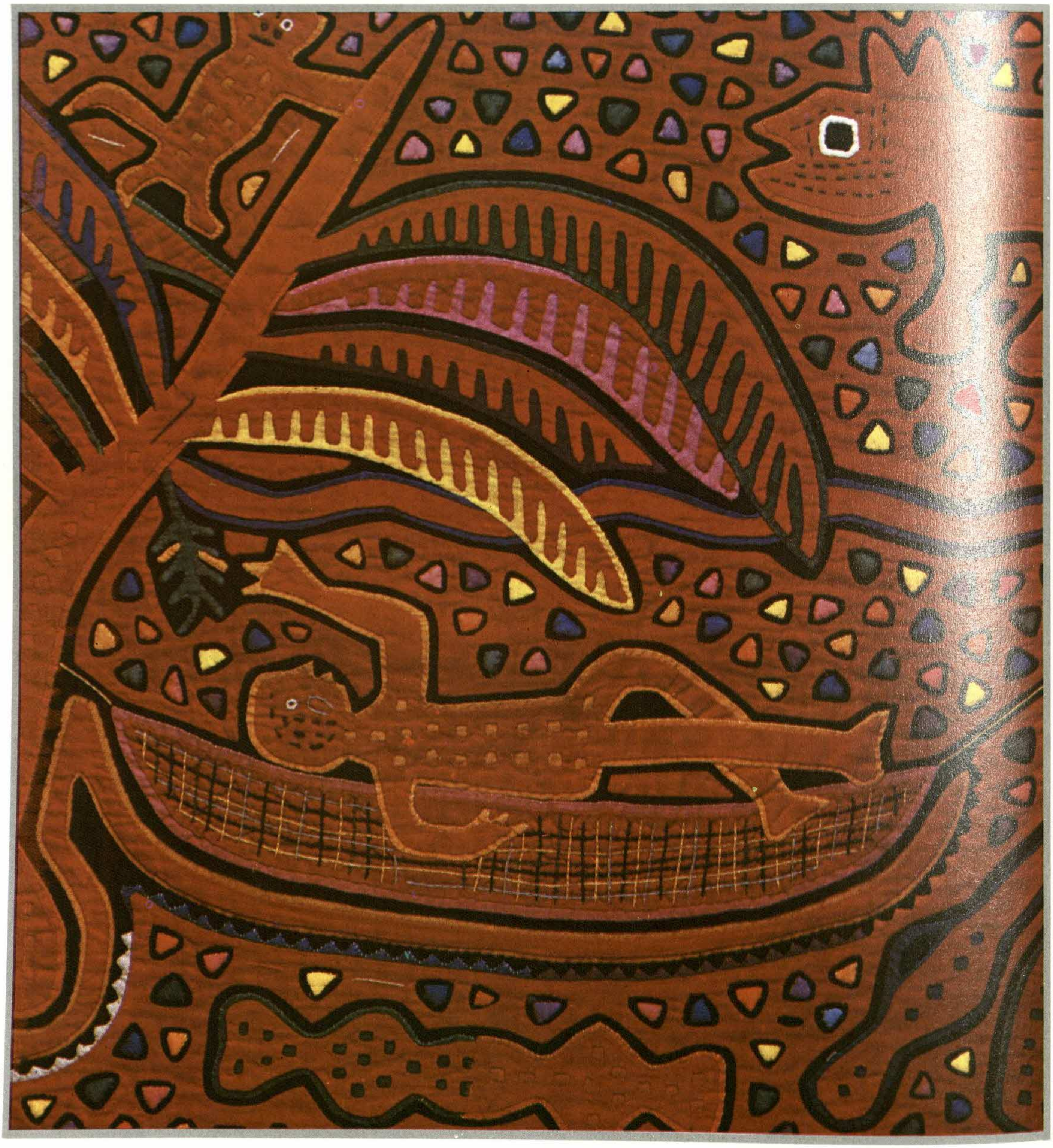
Four pieces of fabric 15cm (6″) square and in strong contrasting colours—red, dark blue, turquoise and yellow.

Matching threads.

Small sharp scissors.

Tracing paper.

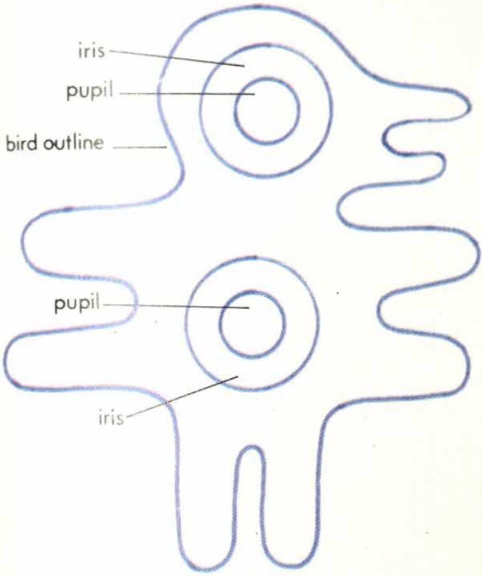
**Working the design.** Tack the four layers of fabric together with one on top of the other and right sides up. To repeat the design shown, the red should lie over the dark blue, the dark blue over the turquoise and the yellow at the bottom.



*This example of mola work shows primitive stylized animals and trees. Note how the appliqué is combined with simple embroidery for finer detail.*

Chris Lewis

☐ Trace the design (fig.1) on to tracing paper making a trace pattern for each colour. On the red fabric draw round the outside shape of the body and, allowing about 3mm ($\frac{1}{8}$") for turnings, cut out using sharp pointed scissors. Clip into points and around curves so that the turnings lie flat.



1. *Trace pattern of the bird motif to be worked on four layers of fabric.*

Victoria Drew

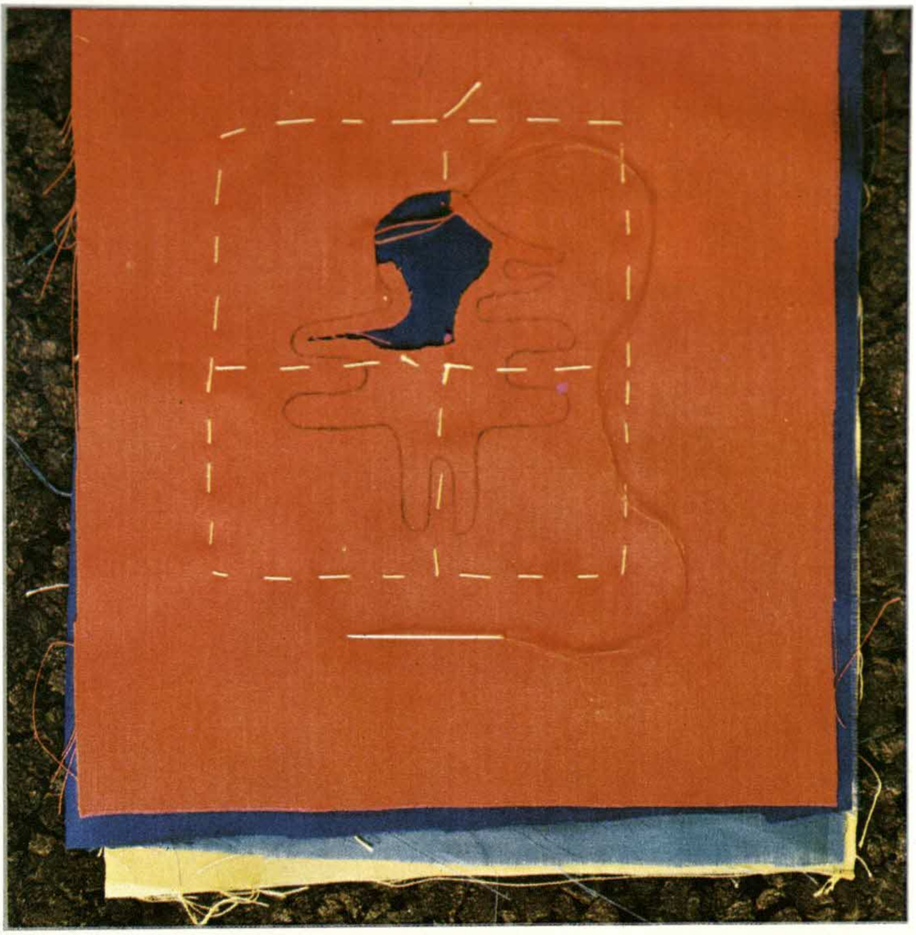
☐ Fold under the turnings, and if necessary pin and tack. Work slip stitch or running stitch around the edges, taking the thread through all layers of fabric.

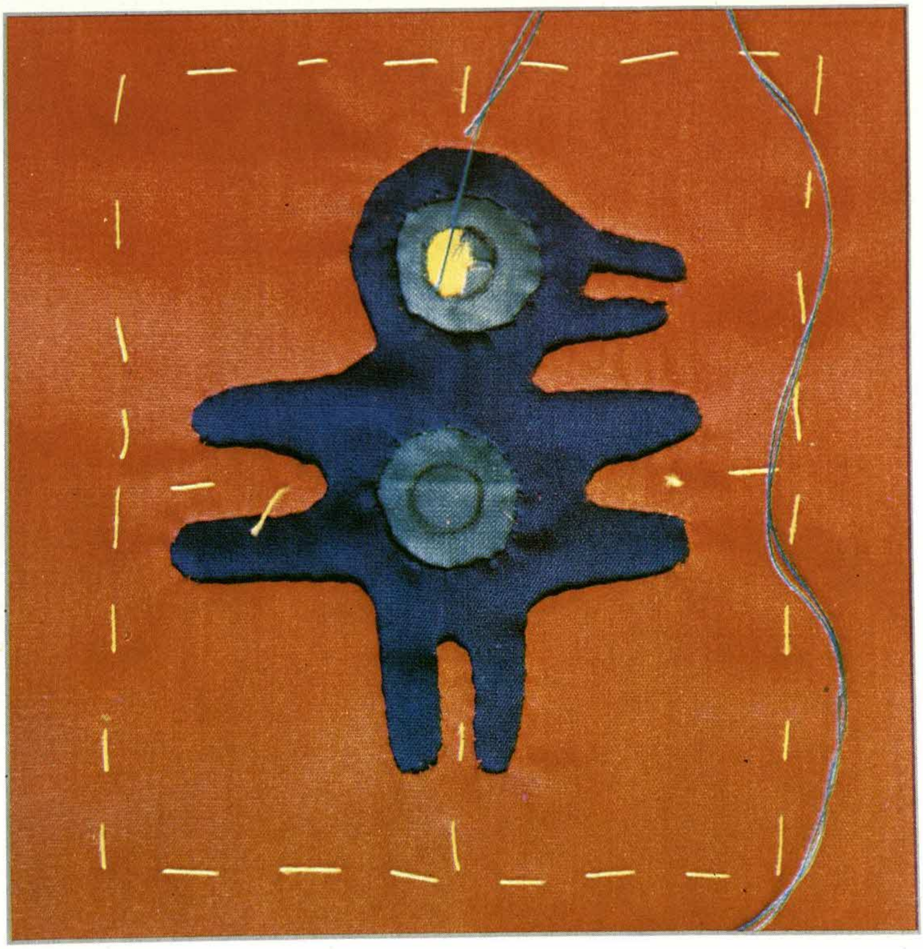
Note: If you cut through a layer by mistake it is easy to repair by inserting a scrap of fabric of the same colour into the slit and stitching the folded edges to it.

☐ Trace the pattern for the iris of the 'eyes' on to the dark blue fabric and cut a cross in the circle, trim to about 3mm ($\frac{1}{8}$") from trace line and clip. Turn in the raw edges and stitch down.

☐ Cut out the pupil of the 'eyes' and stitch the turnings under in the same way to reveal the yellow background fabric as shown in the photograph.

**Exposing random layers.** In some designs you may need to cut away more than one layer of fabric to reach a particular colour. Trim away the excess on the layers between to avoid lumpy turnings and turn under the raw edges of the top fabric.



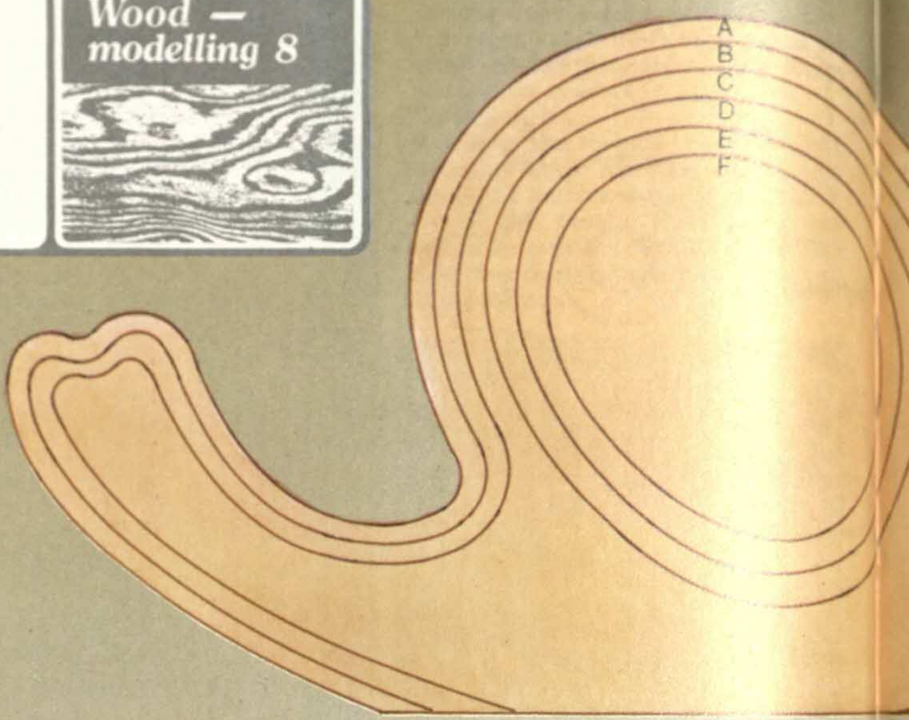


*Top right: layers of fabric are tacked together and part of top layer has been slip stitched round motif outline revealing blue layer beneath.*
*Right: a cross is cut in the last circle to expose the pupil of the eye and the turnings slip stitched.*

Kim Sayer

# Laminated wood sculpture

**Wood — modelling 8**



Offcuts from plywood and softwood can be effectively used to make sculptured toys and ornaments. The seal, illustrated in Modelling chapter 4, page 1246, is made from offcuts. There, the laminating was done first and then the object was shaped. Here, the layers are cut to shape before laminating and the object completed by sculpting.

To make the objects as interesting as possible you will need a reasonably large selection of timber from which to choose a suitable piece.

You may already have offcuts left over from previous work but you might want to supplement your supply. Small bits of plywood and softwood can be purchased from timber yards and DIY stores.

The choice and use of timber is an important factor as it affects the lines and colour of the finished object. It is the edges rather than the facing surfaces of the timber, especially of plywood, which make the objects visually interesting, so look carefully at the colours and thicknesses you intend using.

## The snail

The snail is built up from various layers of plywood and softwood offcuts. It is 9.5cm (3¾″) high and 19cm (7½″) long.

**You will need:**

Tools and equipment as for previous modelling chapters.

Hand drill with 6mm (¼″) bit.

Softwood 20cm x 10cm (8″x 4″), 2cm (¾″) thick—for the centre piece.

Two flat, rectangular pieces of wood 20cm x 10cm (8″x 4″) between which to clamp the object during laminating.

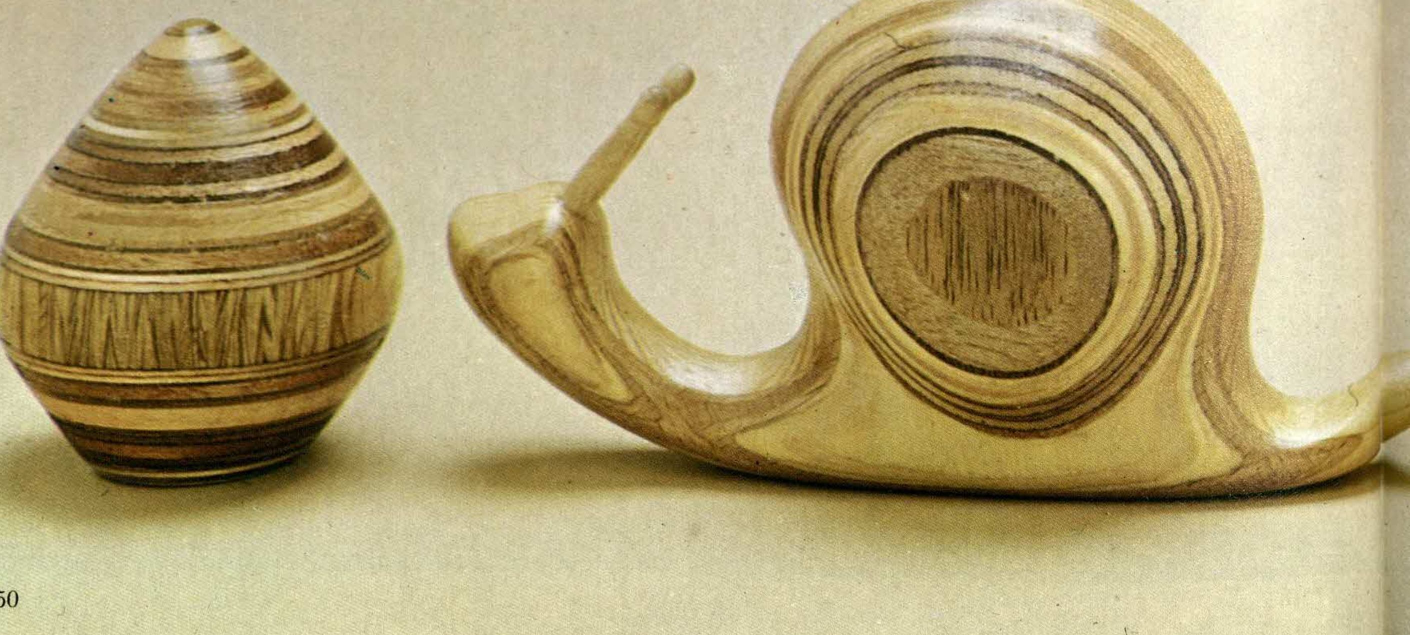
Two pieces of 13mm (½″) thick plywood and eight pieces of 3mm (⅛″) thick plywood—2 for each outline (fig.1).

A piece of dowel 7cm (3″) long, 6mm (¼″) in diameter.

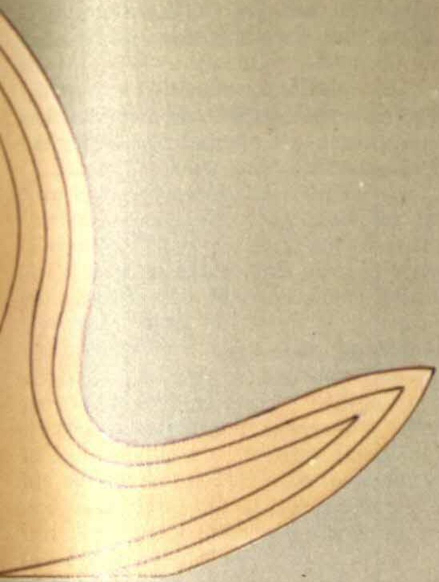
Bits of waste wood or plywood for packing while laminating.

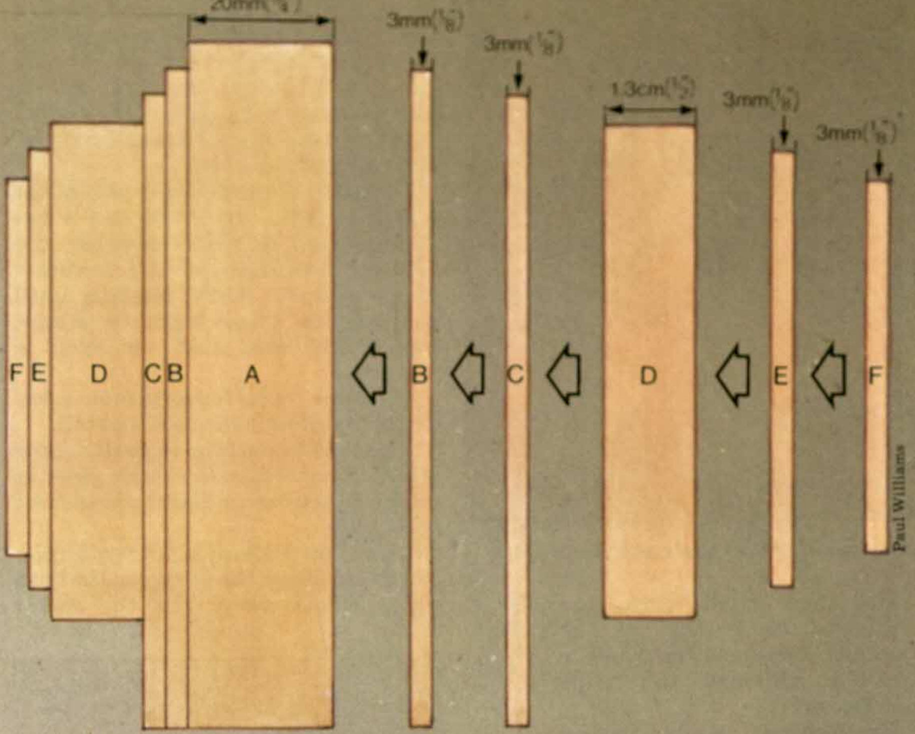
Wood glue.

Medium- and fine-grade glasspaper or similar sandpaper.



*1, 2. A trace pattern and exploded front view of the snail.*





Tracing paper, pencil and scissors.
Polyurethane varnish.

**Construction.** Trace the pattern given (fig.1) and then cut out.

☐ Trace outline A on to the softwood. This forms the inside piece.

☐ Cut out the shape using a coping saw, keeping the blade vertical.

☐ Using scissors, trim the pattern to outline B for the next sawing line and trace the outline on two pieces of 3mm (⅛") thick ply—one for each side of the inside piece. The two pieces need not be the same colour or type of ply, but they must be of the same thickness.

☐ Trim the pattern to outline C and repeat the tracing, selection and sawing process, again using 3mm (⅛") thick ply.

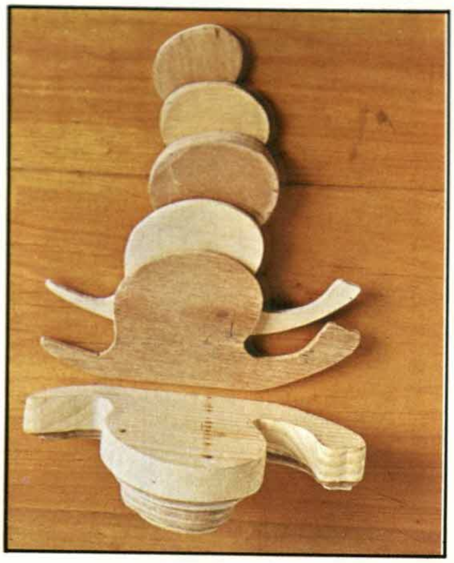
☐ Outline D is the first layer of the shell and the two pieces should be cut from 13mm (½") thick plywood.

☐ The two pieces for layer E and the two for layer F can now be marked on 3mm (⅛") ply, remembering to select carefully the colour and type of wood used.

The ten outer layers of wood are arranged in sequence, five on each side of layer A (fig.2). The pieces can be held in place with rubber bands while they are checked for size. Some edges may need a little tidying with a file or glasspaper, depending on how well they have been sawn.

*Wood sculptures by Sue Burgin.*

Kim Sayer



Steve Bicknell

*Segments of the snail ready for gluing.*

The snail should now resemble a 'stepped' block and, once the tidying up has been done, the pieces are ready to be laminated and prepared for sculpting.

**Laminating.** To glue the pieces, set aside layers B, C, D, E and F from one side so that layer A can be laid flat.

☐ Take the remaining set of layers and place them out in sequence with the side which faces inward, that is towards layer A, uppermost.

☐ Using a small scrap of wood or card, spread the wood glue thinly and evenly on the uppermost side of layer B.

☐ Place this piece, glue downwards, in position on layer A. Repeat the procedure with the remaining layers.

☐ Carefully turn the block over and glue the second side in the same way. Remember that you need only a thin spreading of glue—if too much is used the pieces will tend to slip out of position.

The 'stepped' snail is now carefully clamped to the edge of a table with a G-clamp (or placed in a vice) sandwiched between two flat, rectangular pieces of wood, about 20cm x 10cm (8"x 4") in size.

Small offcuts of wood, known as packing pieces, should be wedged in the spaces between the tail and head of the snail and the flat blocks on either side of the body. This applies pressure to the neck and tail while the glue is drying.

Allow the glue to dry under pressure according to the manufacturer's instructions.

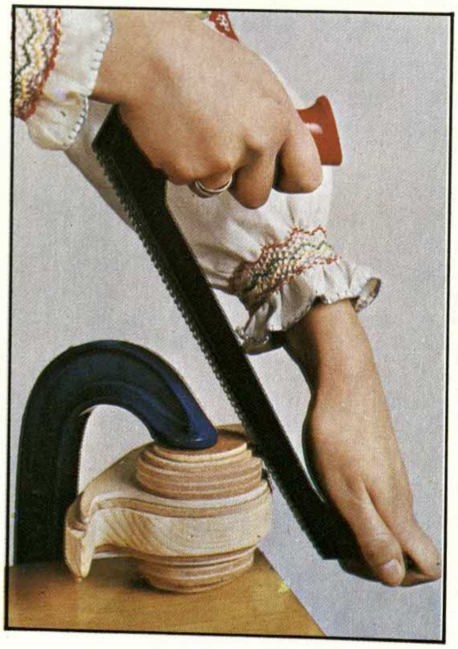
**Shaping.** The snail is now ready to be shaped so that the layers run into each other smoothly. The snail must be held securely while the shaping work is being carried out. Clamping it firmly to the edge of a table, as shown in Modelling chapter 3, page 1228, enables you to work round the object. Some ingenuity is needed in placing and re-placing the G-clamp so that as you work round the shell and into the curve of the neck, the work is still held firmly and the clamp does not get in the way too often. The snail can also be held in a bench vice.

☐ Starting on the thickest part of the rounded top of the snail, use a flat Surform tool to work outwards and downwards from layer F to A as shown in the picture. Work carefully until you see the steps begin to merge, keeping in mind that the shell is rounded.

☐ With the round Surform tool, shape the curves around the neck and tail.

☐ Use the flat Surform to gently curve layers B and C into the inside piece at the base. Remember that the base must be left flat.

☐ Using the edge of a flat, wood file, start working on the groove in the head which slopes away from the centre piece.



*Shaping the snail with a Surform tool.*

**Finishing.** At this stage the snail will have a coarse, woolly appearance from the rough Surform tool. A smoother surface can now be obtained by working evenly over the whole object with a half-round file. As the character of the snail depends on its smoothness and glossy finish, it is worth taking some time and care over this stage.

Finish off the smoothing process with glasspaper. Start with small squares of medium-grade paper and end with fine paper.

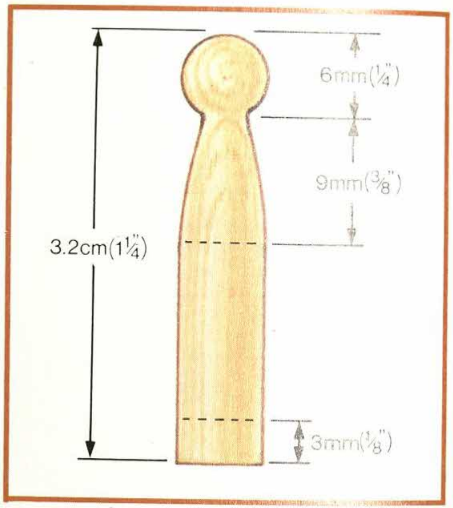
Handle the glasspaper so that an even pressure is applied while cupping the snail firmly in the palm of the hand. Thin cotton gloves could be worn at this stage to protect your hands from being filed in the process.

**Fitting antennae.** To give the snail its complete character, antennae are now made and fitted.

☐ First cut two pieces of dowelling, 3.2cm (1¼") long.

☐ Mark a pencil line 6mm (¼") from one end of each piece. This 6mm (¼") will be for the bulbous tip of the antenna.

☐ Using a half-round needle file, carefully file a section 9mm (⅜") below the pencil line into a conical shape (fig.3).



**3.** *Measurement and shape of antennae.*

☐ Finally shape the top 6mm (¼") into a bulb.

☐ Smooth the pegs with fine glasspaper.

☐ To drill the holes for the antennae, mark two points at the back of the head, towards each edge of the softwood piece. Using a drill with a 6mm (¼") bit, drill the holes at an angle, outwards from the centre and slightly back from the 'nose', to a depth of just over 3mm (⅛").

☐ Test the antennae in the holes for depth and angle and then fix them with a spot of glue.

**Varnish.** When the glue on the antennae has set and any final smoothing touches completed, the snail is ready to be varnished.

Use polyurethane varnish and apply one coat. Allow this to dry completely—according to the instructions given with the particular varnish—then apply another coat.

## The layered bowl

The bowl on the previous page is made like the snail, using laminated and shaped layers of plywood and softwood.

**You will need:**

Seven pieces of plywood and softwood offcuts 20cm x 20cm (8"x 8") of various thicknesses.

A curved wood file and a pair of compasses.

Other tools and materials as for the snail.

**Pattern.** With a pair of compasses draw a semi-circle with a radius of 7.5cm (3″) on a piece of paper (fig.4).

☐ Within this, using the same centre point, draw another semi-circle with a 5.5cm ($2\frac{1}{4}$″) radius. This diagram is a cross-section plan of the bowl. The distance between the two lines will be the thickness of the bowl—2cm ($\frac{3}{4}$″).

☐ Mark in the diameter line—XOY—and a centre line from O to the base point P.

☐ Draw the base line 4mm ($\frac{3}{16}$″) up from the base point P (see fig.4).

**Construction.** Working from the top of the bowl down, select and measure the thickness of the first piece of wood you want to use. Here, 16mm ($\frac{5}{8}$″) thick plywood is used.

☐ Draw a line—ABC—on your plan 16mm ($\frac{5}{8}$″) below the diameter line and parallel to it (fig.5).

☐ With the compasses draw a 7.5cm (3″) radius circle on the 16mm ($\frac{5}{8}$″) ply. Measure line AB with the compass and use this length as the radius of the inner circle which is now drawn on the piece of wood (fig.6).

The thickness of the wood you use determines the inner radius of that piece of wood.

☐ Select the next piece of wood—in this case 10mm ($\frac{3}{8}$″) thick ply. Mark 10mm ($\frac{3}{8}$″) on your plan (see fig.5) along the centre line OP. Draw in the line DEF to the outer circle parallel to the diameter line.

☐ Use the distance from A to C as the radius to mark the outer circle on the second piece of wood (see fig.5).

☐ Measure line DE on your plan with compasses and use this length as the radius of the inner circle.

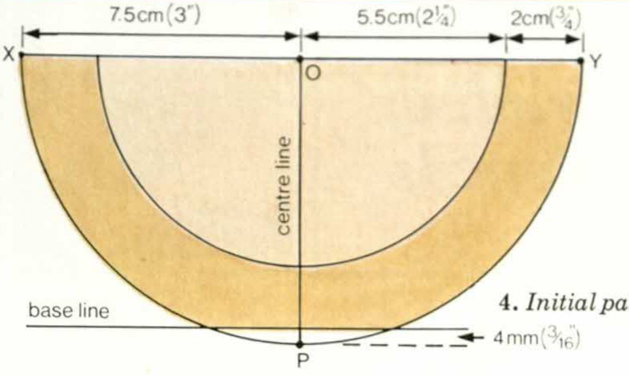
Continue in this way, taking the inner and outer circle measurements from your plan. Remember that for the third layer, the distance from D to F will be the radius of the outer circle for the third piece of wood. The distance GH will be the inner circle radius and DG the thickness of the wood. Note that the layers at the bottom will be solid.

**Cutting.** Cut out the layers using a coping saw. (An electric jig saw would make things easier though it is not essential.) To cut out the centre pieces, drill a hole through which to insert the saw blade (fig.7).

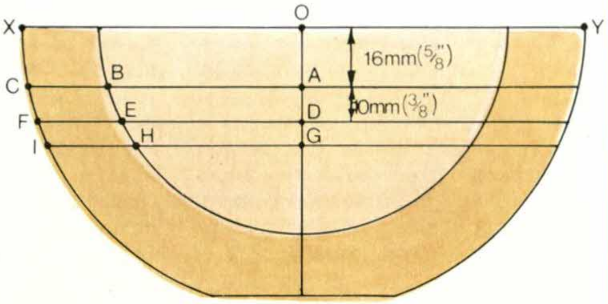
**Laminating.** The pieces of ply used to make the bowl are now glued in position. This is done in two sections. Here (fig.8) seven layers have been used. The top five layers are glued together as one section and the bottom two glued to make the second section.

☐ Clamp the top section to the edge of a table and work through the hole to file the inside smooth.

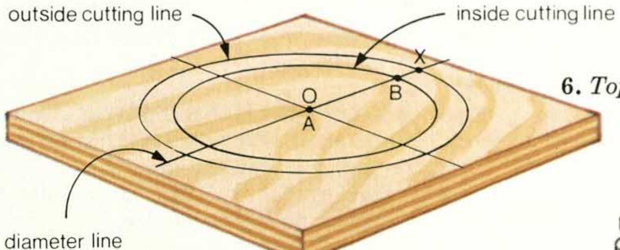
☐ For the bottom section use a curved file and coarse glasspaper to work a slight depression in the centre.



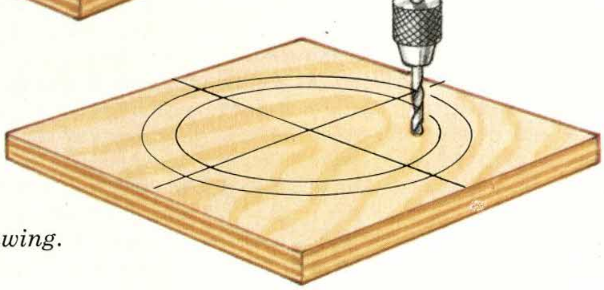
4. *Initial pattern for bowl.*



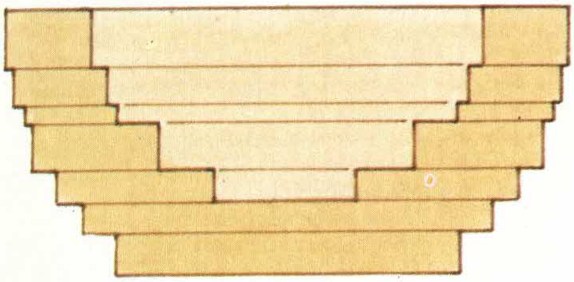
5. *Calculating the radii.*



6. *Top layer ready to be cut.*



7. *Drilling hole for sawing.*



8. *Cross-section of bowl before being laminated*

Paul Williams

☐ When both sections have been shaped inside, glue them together (fig. 8) and clamp between two blocks of wood. Leave to dry.

**Shaping.** The outside of the bowl is now shaped.

☐ Secure the bowl on the corner of a table with a G-clamp.

☐ Using a flat Surform tool, work downwards and at a slight curve as done with the snail.

☐ Finish smoothing with glasspaper and then oil or varnish.

The plywood paperweights seen on page 1751 can be made in a similar way, using a circular plan.

# Screen printing without stencils

Colour — printing 19

Direct gum screen printing is a method of producing a series of prints without a stencil and from only one screen (normally a separate screen is required for each colour). The complete design is painted directly on the screen with dyes and squeegeed through the mesh with gum which forces the painted design on to the material below. Between six and 12 prints can be made from one application of the dye and these will range from full-strength to pastel shades.

## Uses

Direct gum printing can be used on paper or on fabric, and although both are printed in the same way the process is somewhat simpler on paper since fewer chemicals are required to work the dye.

**Paper.** In paper, coverings for boxes, files or books can be produced, or original prints made for framing.

**Fabric.** Enough fabric can be printed to make a roller blind or a lampshade and cushions—each cushion becoming more subtly toned than the one before it. Small garments such as children's clothes could be cut from fabric printed in this way, or a pair of printed kitchen curtains.

**Mixed media.** Gum printing can also be used in combination with stencilled screen prints to enrich a simple shape.

## Preparing the screen

Whether you are printing on paper or on fabric the basic rules apply (Printing chapter 13, page 962).

**Types of design.** Since the design is painted on the screen, bold, flowing lines are more suited to the medium than small geometric patterns, for instance. Designs can be applied free-hand or a preliminary drawing can be made for transfer on to the screen. A photograph from a magazine could also be used as a guide.

**Transferring the design:** To transfer the design to the screen in colour place the preliminary drawing or photograph under the screen and prop the screen on all four corners by at least 6mm ($\frac{1}{4}$") so that it does not touch the design beneath (otherwise the dye will not be applied evenly). Mix the dye according to instructions given here and then paint the design on the screen with dyes. Always allow the dye 3 or 4 minutes to dry before applying a second colour beside the first, otherwise they may blend and change colour.

Alternatively, the screen can be placed flat over the design (without props) and the outline of the design sketched lightly on the screen with a pencil. Afterwards, however, the screen must be propped up to apply the dye.

Other modes of dye application on the screen are also possible—for example, improvised stamps which will hold the dye. The circles in the roller blind opposite, were made by printing with a round sponge.

## Materials for printing

Since some of the materials for printing on paper and fabric are different, note headings for suitable materials for the medium of your choice.

**For both you will need:**

Screen ready for printing, and squeegee.

Selection of brushes for applying colour.

Rubber gloves.

Bowls to contain dyes and gum.

Spoons for mixing.

Fabric or paper for printing.

**For paper:**

Cold water dye such as Dylon in colours of your choice.

Washing soda.

Salt.

Gum—dye thickening agent such as Paintex.

**For fabric:**

Fast-acting cold water dyes such as Procion M.

Gum—dye thickening agent such as Manutex.

Water softener.

Urea to dissolve the dye.

Special salt such as Resist Salt L.

Cleansing agent such as Lissapol ND.

Sodium bicarbonate.

Additives for dyeing fabric with fast-acting cold water dyes are obtainable from craft shops and screen printing suppliers who sell these dyes. (Working them is explained in detail in Dyeing chapter 8, page 640.)

Note: while ordinary cold water dyes are only suitable for printing on paper using this method, fast-acting cold water dyes can be used on both paper and fabric.

**Fabric.** Cotton and viscose rayon are recommended but before use they should be boiled for half an hour, preferably in a little cleansing agent (Lissapol D) and then rinsed thoroughly to remove any chemical finishes or impurities.

## Printing on paper

☐ Prepare dye and mix in gum thickener according to manufacturer's instructions (Dyeing chapter 1, page 150 and Dyeing chapter 2, page 188, give detailed information about using cold water dyes and thickener respectively).

☐ Paint design on screen as previously described.

☐ Place screen over paper to be printed and pour a line of dye thickener in the 'well' of the screen.

☐ Pull the squeegee forward to print.

**Repeat design.** If you are printing a repeat design never place the screen on any part of a wet print but let it dry first. It is generally easier to space the motifs fairly far apart.

As the dye is transferred at each printing, the design on the screen will gradually fade and so will the prints.

## Printing on fabric

This involves mixing dyes and thickener separately.

**Preparing gum thickener.** This basic mixture must be made first. Part of it is used to thicken the dyes for painting on the screen; the remainder is used along with other ingredients to squeegee the design and fix it on the fabric.

☐ Dissolve 1 tablespoon of water softener in 170ml (6fl oz) of warm water.

☐ Add .85 litres ($1\frac{1}{2}$pts) cold water.

☐ Sprinkle 4 tablespoons of gum thickener on the mixture and stir for 5 to 10 minutes.

☐ Leave the gum to stand overnight and remove any lumps by straining.

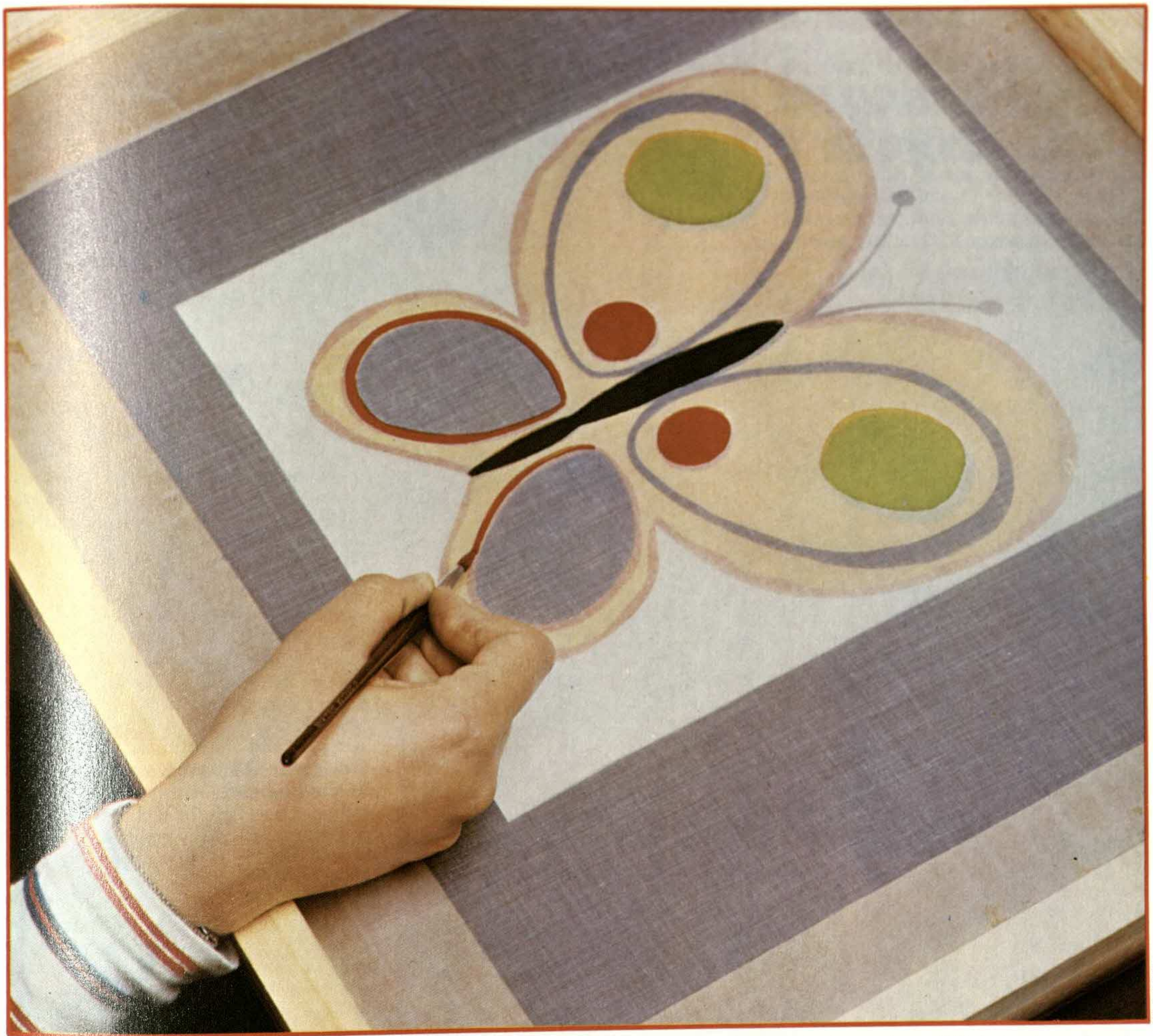
**Fast-acting cold water dyes** are completely intermixable and a wide range of colours may be obtained from the three primary colours of red, yellow and blue. The higher the ratio of water to dye the paler the shade.

In order to obtain the correct paint-on consistency these dyes must usually be mixed with gum thickener as well as squeegeed with it to print.

☐ Mix the dye according to manufacturer's instructions. This usually involves adding boiling water and allowing it to cool, then adding the soda, salt and urea. (See dye recipe, Dyeing chapter 8, page 640.)

*Primary colours are used to good effect on this roller blind and bin. The density of colour varies according to the amount of thickening agent added to dyes. Design Jill Barber.*

Kim Sayer



Dick Miller

*The butterfly motif is being traced with dye on to the screen. Using this method an unlimited number of colours can be printed simultaneously.*

**Adding thickening agent to dye.** The proportion of dyestuff to thickening agent can vary according to the effect you wish to make but the maximum ratio of thickening to dye mixture should be 50:50. The design may also be applied without additional thickening but it will run or spread out slightly. This can be used to good effect, however, as illustrated in the blind; page 1755. The blue waves were applied without thickener, while the yellow, orange and red each had different amounts of thickener mixed into each dye.

**Preparing gum for squeegeeing.** Unlike the gum thickener used for squeegeeing the design on to paper, chemicals must be added for fabric printing which will react with the dye on the fabric and render it fast. The recipe given is for enough gum to print an average-sized design about a dozen times.

☐ Dissolve 10 tablespoons of urea in 256ml (9fl oz) warm water and add four cups of thickener from the amount previously mixed.

☐ Next add 1 tablespoon Resist Salt L and allow mixture to cool thoroughly.

☐ Just before proceeding to print add 1½ tablespoons sodium bicarbonate and stir.

Print in the same fashion as paper.

**Fixing the colour.** When the fabric prints are completely dry they must be fixed by ironing for 3 minutes per 900sq cm (1sq ft) using the maximum possible heat for the type of fabric.

☐ Then rinse the fabric in cold running water to remove any surplus colour.

☐ Finally, boil the fabric for 5 minutes in water and a little cleansing agent in order to remove the gum thickener. The colour will now be completely fast.

*Brighten up your deck-chairs with a colourful design on the back. Between six and 12 prints can be made from one application of dye.*

Steve Bicknell

## Cleaning up

When the printing is completed wash the screen and squeegee very thoroughly in hot water.

## Variations

Even after washing, the design will remain faintly visible on the mesh and may therefore be painted over and over again in order to reproduce more of the same design or to overprint some of the original printings, altering the position somewhat. As the dye is transparent it will always alter its colour when it comes in contact with the colours previously printed.

# Etching on copper

Metal 22

Kim Sayer

*A large, finely detailed etching which has been mounted on 6mm ($\frac{1}{4}''$) chipboard.*

Etching is a technique used to form patterns and designs in metal. An acid or etching fluid is used to eat away part of the metal surface to leave a slight recess. It is not a difficult technique but due care must be taken as the etching fluid is corrosive.

The technique can be used to make decorative panels, place mats, name plates, number plates and coasters etc. This first chapter on etching will introduce the basic technique using a proprietary kit. The kit contains specially treated, copper laminated plates which react to a very mild etchant, formulated for etching into such plates. Because the danger of working with a corrosive acid is avoided, this method is suitable to begin with—but has limitations.

For example, plates cannot be used for making prints of the design on paper. The technique of preparing plates for printing is dealt with in a later chapter.

## Technique

For Copper Etch Craft a special, copper laminated surface is used. The etching plate is covered with a thin layer of copper on a black base. When the copper is corroded by the etchant the black base is revealed giving the design a copper and black finish.

**Designs.** Pictures, patterns and abstract motifs are all suitable for using as a design for etching. Draw the design on tracing paper and always draw the outline of the copper on which it is to be etched, around the design. This helps to keep the design in the correct position when it is transferred to the copper. It also gives you some idea of the overall effect of the design on the shape of the copper to be used, ie you can immediately see if the design is 'squashed' on the metal or if the undecorated parts are too large.

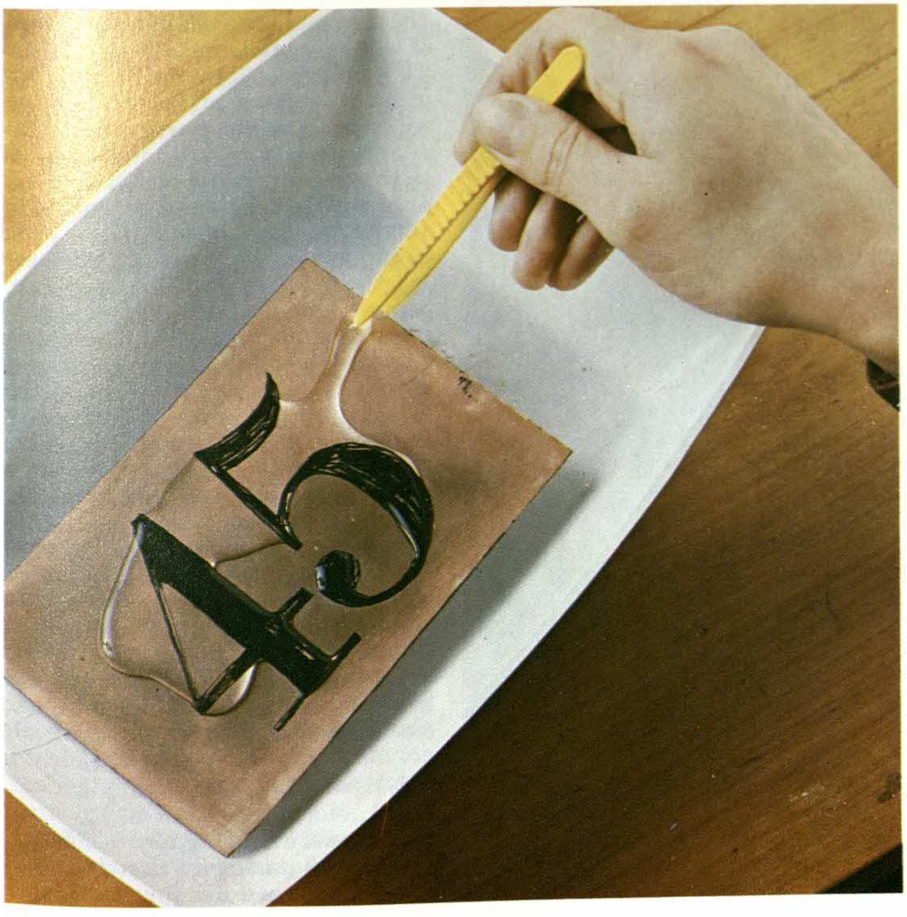
**Resist wax.** The material used to cover and protect that part of the copper which is not to be etched is called an etchant resist. The etchant resist is usually a type of wax or varnish. For most purposes candle wax or paraffin wax will do. The wax is melted in a double boiler or in a tin placed in a pot of hot water—but never over a naked flame.

The melted wax is painted on the copper and once it has set the design is scratched or etched into the wax, until the copper surface below is revealed.

**Tools.** No special-purpose tools are required to etch the design into the wax. A large darning needle will do as well as a cocktail stick. A metal knitting needle can also be used as well as a dead ballpoint pen. The finer the line to be drawn, the finer the tool used. Always check the point of whatever item you decide to use and make

*Above: using carbon paper and a ballpoint pen to transfer the design.*

*Below: the plate after immersion in the etching fluid for several hours.*



Steve Bicknell

sure that it will produce the line you want.

**Etching fluid.** The etchant is mildly corrosive and contact with skin and eyes should be avoided, wash off any spilt etchant with plenty of cold water. The etchant reacts with metal so avoid contact with metal other than the surface being etched.

The etching fluid eats away at the exposed parts of the metal so when you draw the design in the wax remember to remove the wax from those parts of the design which are to be black.

## Etching on copper

Prepare a working area on a steady surface near a tap. Cover the surface with newspapers and once you have set up the container with the etching fluid do not carry it around.

**You will need:**

Copper—Etch Craft laminated plates.
Design—full scale on paper.
Carbon paper.
Scouring powder—proprietary household powder will do.
Metal polish.
Metal varnish—optional.
Resist—candle wax or paraffin wax.
Brush—for applying wax.
Tools—knitting needle, dead ballpoint pen etc.
Etchant: Etch Craft crystals.
Container—etching must be done in a glass or plastic dish—metal containers must be avoided.
Clothes peg or plastic tweezers.

☐ Carefully clean the copper surface to be etched with scouring powder.

☐ Transfer the design to the clean copper surface by placing the pattern on the carbon paper and going over the design.

☐ Melt the wax and, using the brush, apply it to the copper over the design. The entire surface must be covered evenly. If the wax is uneven hold the metal, wax side up, over steam to even out the wax. Also cover the back and sides of the plate with wax to protect it from the etching fluid. This can be done roughly but be careful not to damage the wax on the design.

☐ When the wax has set use the tools to scratch away those parts of the design which are to be etched. Scratch right down to the metal so that it will be exposed to the etching fluid.

☐ Immerse the copper with the design upwards in prepared etching fluid. Leave it until the design shows distinct black lines.

☐ Remove the copper from the etching fluid using a clothes peg or plastic tweezers. Hold it under hot running water to remove etching fluid and wax.

☐ Wipe dry with a soft cloth.

☐ Polish with metal polish and cover with metal varnish to prevent the copper from discolouring.

# Smooth-faced needlepoint rugs

Rug making with a needle on a canvas foundation is a natural development of needlepoint. Many of the same techniques and principles apply, although even a small rug is an ambitious project since the amount of work involved and the cost of the materials exceed those of many of the items normally undertaken in needlepoint.

Needlepoint rugs may be made with stitches which give a smooth-faced finish as described in this chapter or they can be made with a pile finish as described in the following needlepoint chapter. Sometimes the two techniques are combined where the main interest of the rug is intended to be in its texture rather than its pattern. The basic materials, however, are similar for both methods.

## Canvas

In order to produce a good heavy surface which will be hard wearing, the rug should be worked on a heavy gauge canvas or a special jute backing so that the surface can be stitched in a thick yarn. This has the extra advantage as far as the working is concerned of being quicker and easier than on finer gauge canvas.

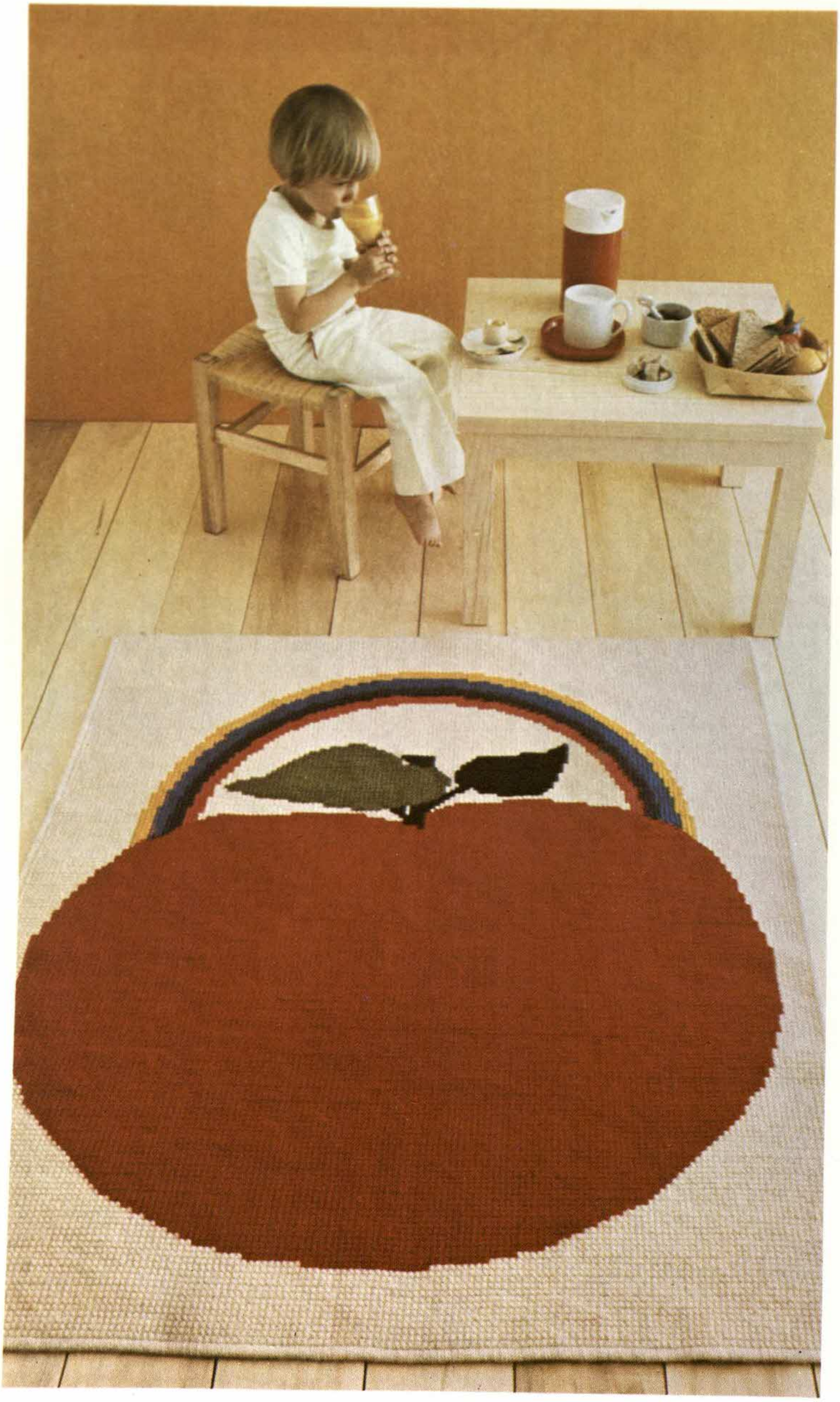
Suitable double mesh canvases are those with 3½, 4, 5 or 7 holes per 2.5cm (1″). Single mesh canvases can be used for some needlepoint rugs although they are not suitable for all stitches.

The canvases are available in a variety of widths from 30cm (12″) up to 90cm (36″) or even 115cm (45″). You will often find that a mail order supplier will stock a wider range than a small retailer who may not have space for all the different widths and gauges.

**Jute backing.** This can be used as an alternative to a canvas background fabric and it is preferred by many experienced needlepoint rug makers because the finished rugs feel more substantial and more like woven rugs. Jute backing fabric (sometimes known as jute embroidery canvas) is available in 90cm (36″) or 122cm (48″) widths.

Except for the edging which should be worked over two threads, the stitches on jute are always worked over four threads. To make counting easier, the threads are woven in blocks of four (fig.2a, overleaf) or in pairs (fig.2b), with 16 threads per 2.5cm (1″).

**Amount of background fabric.** If the desired width of the rug corresponds with an available width of background fabric, buy a piece of the desired length plus 10cm (4″) for turnings. If the background fabric is not available in the exact width required, buy the next



*This simple, bold design was worked in cross stitch in six-ply wool on a heavy-gauge rug canvas.*

100 Idées de Marie Claire/Dirand

## Amount of yarn for canvas

| Double mesh canvas—No. holes per 2.5cm (1") | Yarn—No. strands | Types of stitch | Approx. weight of yarn per 30cm (12") sq |
|---|---|---|---|
| 3½ | 1 strand 6-ply or 3 strands 2-ply | short pile<br>smooth-faced | 300gm (11oz)<br>225gm (8oz) |
| 4 | 3-4 strands 2-ply | long pile | 325gm (12oz) |
|  | 2-3 strands 2-ply | short pile<br>smooth-faced | 225gm (8oz)<br>200gm (7oz) |
| 5 | 1-2 strands 2-ply | short pile<br>smooth-faced | 175gm (6oz) |
| 7 | 1 strand 2-ply | short pile<br>smooth-faced | 160gm (5½oz) |
| Jute: 16 threads per 2.5cm (1") | 2 strands 2-ply | short pile<br>smooth-faced | 225gm (8oz)<br>200gm (7oz) |

width up and cut it to size, allowing 5cm (2") all round. When doing this, halve the amount of background fabric to be removed from the width and cut this amount from each side.

## Yarn

Essential factors when selecting yarn for needlepoint rugs are that it must be hard wearing and it must cover the background fabric satisfactorily to give good wear, yet it should not be so thick that it distorts the background.

**Six-ply wool** is sold specially for home rug making and is easily available although it is fairly expensive and can be used only on the heaviest gauge canvas unless it is split. It is available in a fairly wide colour range and is sold in hanks of 50gm (2oz) each.

**Two-ply Axminster wool** of the type used in carpet manufacture is the most economical yarn to use although it is usually available by mail order only. It can be used on jute and all gauges of canvas by threading two, three or even four lengths in the needle to make the required thickness.

It is available in a wide range of colours, in continuous lengths in hanks or as broken lengths in thrums.

Thrums are the cheapest way of obtaining yarn for making rugs. They are the ends of the warp cut from the loom after a length of carpet has been woven industrially. They are sold off from carpet mills in bundles of mixed colours and, if you order 'long thrums', they are in good working lengths for stitching.

Usually it is possible to specify the types of colours you would like—autumnal or floral shades for example—but it is advisable to over-estimate the amount you will need because the colours are dyed for a particular run of carpet and are seldom repeated.

**Other yarns.** Where you want an interesting texture it is possible to use fancy weaving yarns, such as bouclé. These are fairly expensive and are usually only available through specialist shops.

**Amount of yarn.** This varies according to the type of stitch and the gauge of canvas. For example, a pile stitch will usually take more yarn than a smooth-faced rug, and double cross stitch will take more than single cross stitch. The chart shown here gives a general, generous guide to the amount required for jute and each type of canvas. Always buy more than the minimum amount you expect to use—any colours remaining can usually be incorporated into another project.

## The needle

Use a large-sized tapestry needle which can easily be threaded with the yarn. A No.14 size is suitable for most yarns. When making a multi-coloured rug, you will save time by having several needles, each threaded in a different colour.

## Frames

Unlike many other forms of needlepoint it is not essential to mount the background fabric on to a frame and, in many cases, it is not possible to find a frame large enough unless you work the rug in sections. Small, smooth-faced rugs, however, can be mounted on a frame with rollers, although this type of frame should not be used for pile rugs. If you are not using a frame it is quite comfortable to work with the rug across the knees or with it on a table.

*Working on a frame with the spare canvas wound on to the rollers.*

Transworld

## Preparing canvas

To form a neat, firm edge, the cut edge at the top of the canvas—where the needlepoint will be started—should be turned over for about 5cm (2") and the first few rows of stitching worked through the double thickness. Unlike pile rugs—where the canvas should be turned up on to the right side—with smooth-faced rugs it is better to make the turning on to the wrong side to avoid the danger of forming a ridge which would show through the needlepoint.

**Canvas with selvedges.** Make the fold about 5cm (2") from the top edge along one of the canvas threads so that the holes in the turning correspond exactly with those above or below.

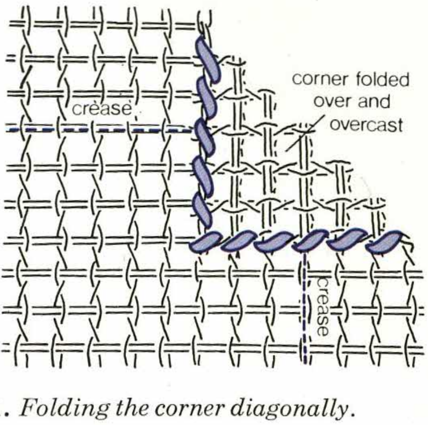
☐ Stitch down with cross stitch using ordinary sewing cotton double or button thread.

☐ Prepare the bottom edge by overcasting over the single thickness, passing the stitches over one complete hole. Do not turn the edge until you are within about 7.5cm (3") of completing the design so that you can check the exact number of rows required and the turning can be made accordingly.

**Four cut edges.** On canvas where you have cut off the selvedges, fold over the top edge as described above. Count the threads across the width to check you have the required number for the design and fold over the side edges along the next thread. Crease well with your fingers.

☐ To mitre the corners, open out the folds and turn under the corners diagonally where the crease lines meet, matching the squares (fig.1). Crease the folds firmly and overcast to hold the squares in place.

☐ Turn under the edges again along the same creases and secure by working cross stitch in ordinary sewing cotton, double or button thread. Start 10cm (4") from the bottom of the rug, work up one side, along top and down the opposite side to within 10cm (4") of the bottom. Work overcasting along the bottom edge as described for canvas with selvedges.



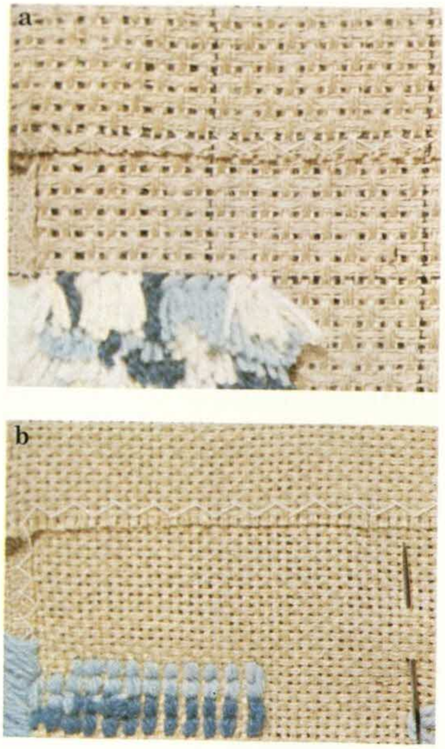
1. *Folding the corner diagonally.*

Coral Mula

## Preparing jute

Fold over the selvedges for 1.5cm (½") and secure by herringbone stitch (see Embroidery chapter 6, page 802). Fold over the top and bottom edges for 5cm (2")—there is no need to mitre the corners—and herringbone in the same way.

☐ Work the rug to within 7.5cm (3") of the complete design, check the number of rows needed to complete the pattern and adjust the depth of the turning if necessary.



**2a, b.** *Herringboned edges of jute backing. Notice how the edges are turned to the right side for pile stitches* **(2a)** *and to the wrong side for smooth-faced stitches* **(2b)**.

Ray Duns

## The edging

The strongest and most attractive type of edging is formed by the plaited stitch described in Latch-hooking chapter 2, page 1132.

On smooth-faced rugs worked on heavy gauge canvas it is often advisable to oversew the edges in matching yarn before the plaited stitch is worked so that none of the canvas shows through. Work the edging along the top edge and along both sides to within 15cm (6") of the bottom edge. Complete the sides and work along the bottom edge when this is turned up.

## Stitches for smooth-faced rugs

The stitches which cover the background fabric effectively, thereby giving maximum wear, are those which cross the fabric threads diagonally. They include tent stitch (see Needlepoint chapter 6, page 850), cross stitch (chapter 5, page 568) and its variations, double cross and rice stitch (chapter 7, page 878) and long-legged cross stitch (fig.3).

In a rug where the design is pictorial or oriental, it is usually better to work in one stitch throughout. On a rug where the design is a simple geometric pattern or where texture and colour are the main features the stitches may be mixed, thus adding to the textural effect.

**Working the stitching.** If you are doubtful about how many strands of yarn to use work a sampler of the stitches you plan to use so that you can see the effect.

When working with several strands, use the fingers of your left hand to keep them flat so they lie side by side without twisting.

If you are not using a frame, work the stitching with the top edge of the rug towards you and with the bulk of the unworked fabric stretching away from you. If you are using a frame it is a matter of personal preference whether you work from the top down or vice versa, but still mount the canvas with the selvedges to the left and right.

The stitching may be worked in horizontal, vertical or diagonal rows, or motif by motif, according to the nature of the pattern. Where a geometric pattern is based on a grid, as shown in the blue and beige rug in the photograph, work this first and then fill the spaces in between.

If you are making a multi-coloured rug try to work as many stitches as possible at one time from the length of yarn in your needle—even if it means passing behind the canvas for a few squares—to avoid the wastage which comes from continual fastening on and off. To ensure neatness on the wrong side of the rug, either work subsequent stitching over these long stitches or pass the thread through the backs of previously worked stitches, as appropriate.

## Stretching the rug

Both smooth-faced and pile rugs benefit from being stretched and dampened after the needlepoint has been worked.

Tack the rug, right side up, to a wooden surface, following the method in Needlepoint chapter 6, page 850. (Place a clean cloth, such as an old sheet, underneath the rug to prevent the work from becoming marked.) Cover it with several sheets of clean blotting paper and soak the paper with as much water as possible.

Cover the wet blotting paper with an old dry towel or blanket and leave to dry—this will probably take a week. Fluff up the pile with your fingers.

PAF International

*This kind of naïve pictorial design is fun to plan and work.*

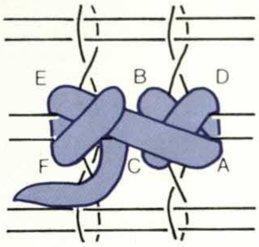
## Basic stitches

**Long-legged cross stitch.** This stitch must be worked in alternate directions across the fabric to prevent the rug from going out of shape. Notice how the long leg connecting each stitch is worked in the direction in which you are travelling. Start and finish each row and each block of stitches worked in one colour within each row with a regular cross stitch.

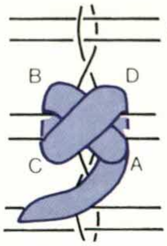
☐ Start by working a regular cross stitch between holes A-B-C-D (fig. 3a) and return the needle to hole A (fig.3b). Pass to hole E and work a cross stitch between holes E-F-B and bring out the needle at C (fig.3c). Continue like this along the row, finishing as shown in fig.3d.

☐ To start the second row, pass the needle vertically on the wrong side of the canvas to emerge at the first hole of the row (fig.3d, point A). Continue as shown in figs.3e-g. The tops of the stitches in this row should be worked into the bottoms of the stitches in the previous row.

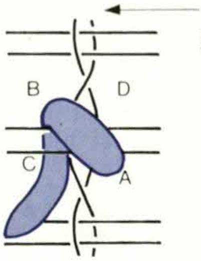
**Deep long-legged cross stitch.** This is worked in a similar way but over two double bars of weft instead of one double bar (fig.4).



3c

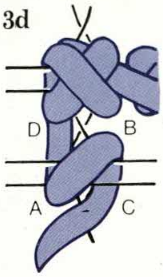


3b

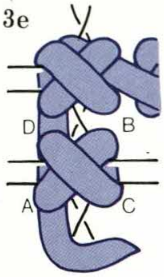


3a

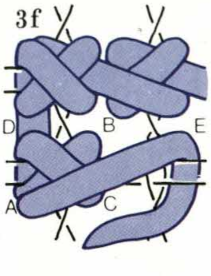
3d



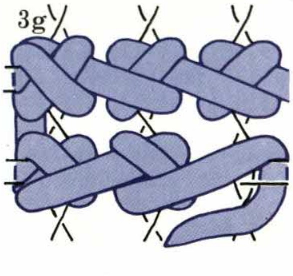
3e



3f



3g



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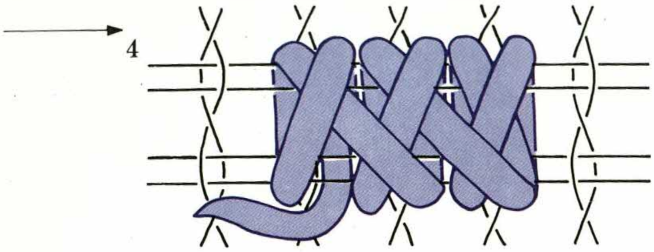


Coral Mula

# More about perspective

**Design know-how 63**

Using the principles of perspective drawing given in the previous Design know-how chapter, it is possible to make an accurate perspective drawing of an object given only the top view (the plan) and the side view (the elevation). This is called a plan projection.

Architects use this method of drawing to get an idea of what a building will look like when it is finished, but it is equally useful to see what any three-dimensional design will look like before it is made.

## A perspective drawing

The drawing of a simple box is shown to demonstrate the method, but the same method can be used for very complicated shapes.

The side and top view of the box are given in fig.1. Using the information given by these two shapes, ie the height, width and length of the box, a perspective drawing can be made.

☐ Following fig.2, draw the top view of the box at any angle on a sheet of paper.

☐ Draw a line (the line of vision) from the corner nearest to you, ie corner D, towards you and mark the station point. This can be anywhere along the line of vision, but for convenience should not be too near nor too far away from the top view.

☐ Next draw the picture plane (see Design know-how chapter 62, page 1736) as a picture frame with top and bottom sides perpendicular to the line of vision and the top of the frame touching corner D.

☐ Mark the horizon line across the picture plane. If you want your perspective drawing to be from a high eye level, draw the horizon line towards the top of the picture plane; if you want a view from a lower eye level, draw the horizon line towards the bottom of the picture plane.

☐ Find the vanishing points on the horizon line by drawing two lines from the station point—one parallel to side AD and one parallel to side DC. Where these lines cross the top of the picture plane, draw perpendicular lines down to the horizon line. Where these lines cross the horizon line marks the two vanishing points (fig.2).

☐ Draw the side view of the box on the bottom of the picture plane, and draw a line from the side view to the line of vision to mark the height of the box (fig.3).

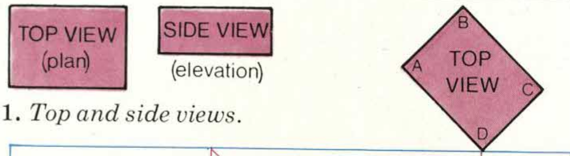
☐ Draw lines from the top and bottom of the line marking the height of the box to the vanishing points (see fig.3). You have now drawn a perspective view of the sides of the box but have not drawn where the sides end.

☐ Draw two lines from corners A and C to the station point. These lines represent the line of vision from the station point to the two corners. Where these lines cross the top of the picture plane, draw two perpendicular lines down to the sides of the box to mark where the sides end (fig.4).

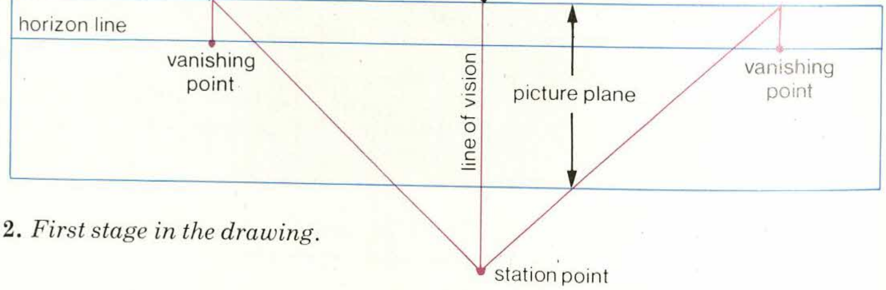
☐ Mark corners X and Y.

☐ To mark in the other two sides of the box, draw two lines from corners X and Y of the box to the vanishing points on *opposite* sides. Where these lines cross (point Z) marks the fourth corner of the box.

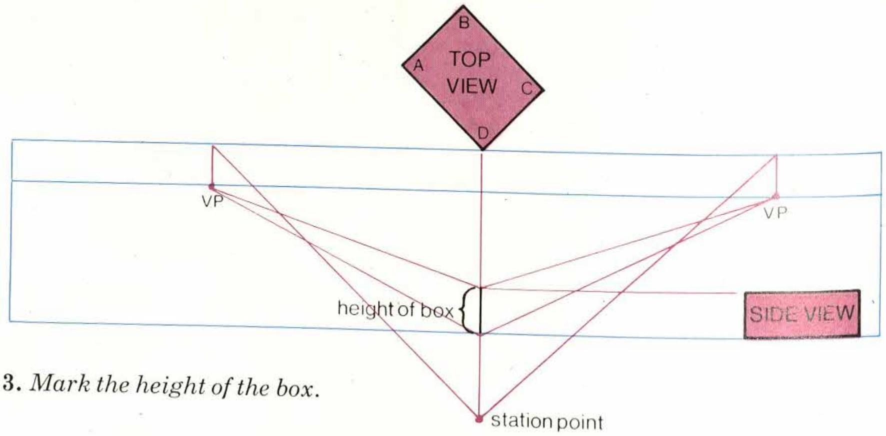
The drawing is complete.



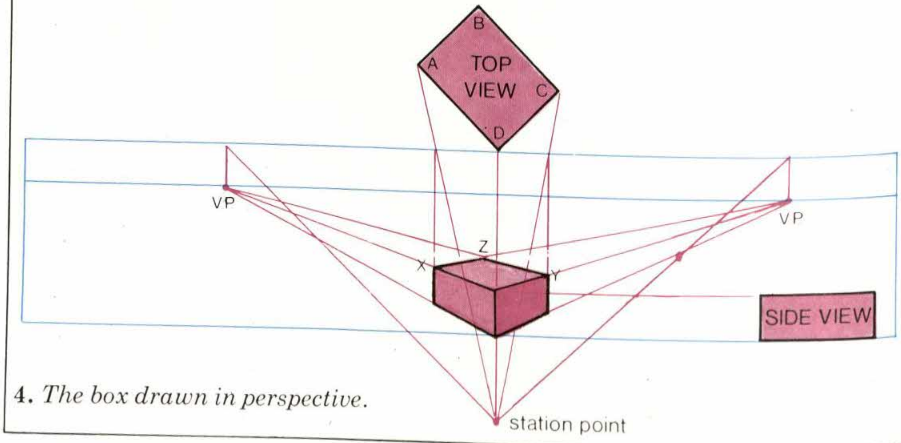
1. *Top and side views.*



2. *First stage in the drawing.*



3. *Mark the height of the box.*



4. *The box drawn in perspective.*

Paul Williams

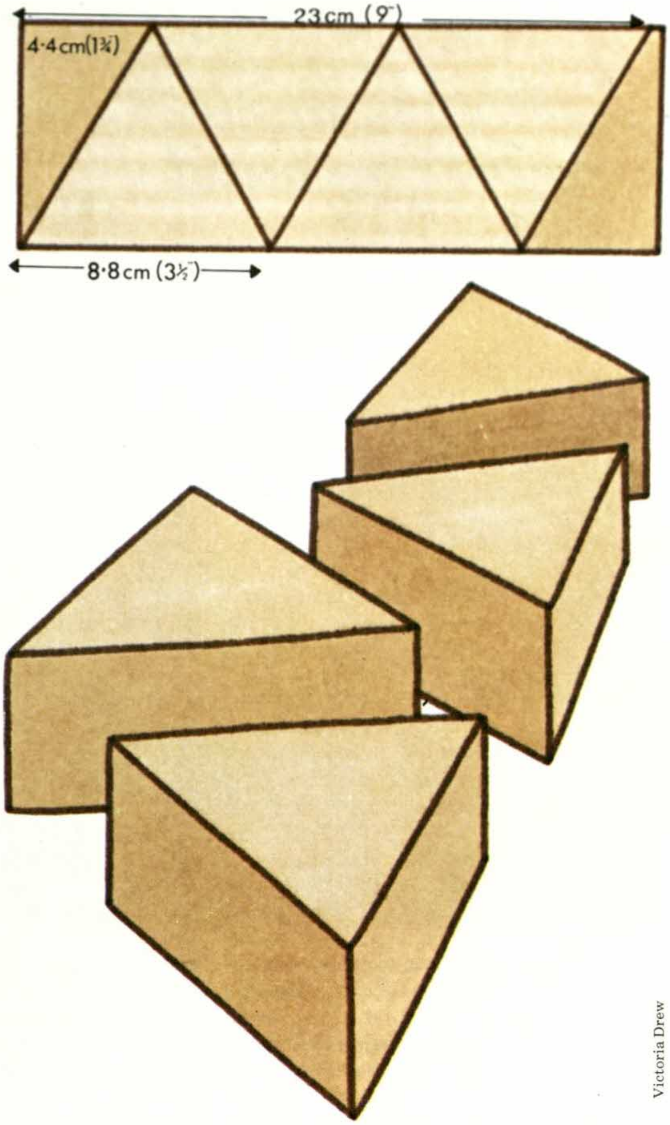
# Creative ideas 63

## Wooden candelabrum

Dining by the glow of candlelight is not only romantic but also practical. You may have already made your own candles (see Wax chapter 1, page 52) and, by following the simple instructions here, you can now make a candelabrum too.

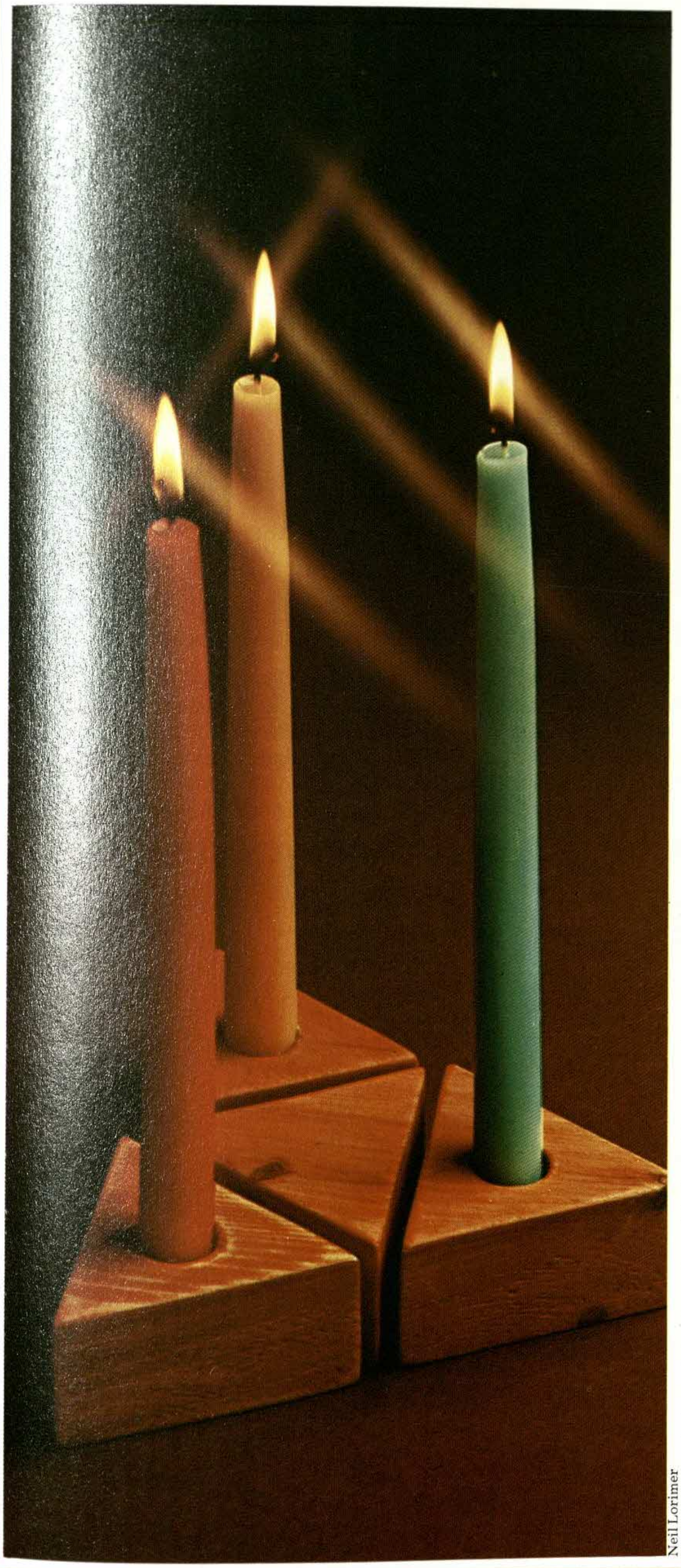
**You will need:**

Softwood such as pine 23cm x 7.7cm (9″x $3\frac{1}{8}$″) and 45mm (2″) thick.



Victoria Drew

**1.** *Follow these measurements and cut out four softwood triangles.*



Neil Lorimer

*This candelabrum can take on a new form by simply re-grouping the triangles.*

Clear or coloured polyurethane varnish.
Ruler and pencil.
Saw.
Fine glasspaper or similar sandpaper.
Drill with drill bit corresponding to candle size.

Measure a point 4.4cm ($1\frac{3}{4}$″) from one end, along one length of the pine. With this as the apex of the first triangle, divide the pine into four equilateral triangles with 8.8cm ($3\frac{1}{2}$″) sides, as shown in fig.1.

Carefully cut out each of the four triangles with the saw. Lightly pencil a mark half way along each side. With a line connect each mark to the opposite point of the triangle. At the place where the three lines cross, drill a hole approximately 3cm ($1\frac{1}{4}$″) deep. The diameter should correspond to that of your candles. Drill holes in only three of the triangles as the fourth, or central one, does not have a hole.

Sand each block to a smooth finish, and then apply two coats of either clear or coloured polyurethane varnish to protect the wood. The natural wood will be a refreshing change from brass and plastic.

If you do decide to use a colour, however, take into consideration the table setting and how well it will blend or contrast with the colour of your candles and candelabrum.

# How to make paper by hand

Paper 45

Making hand-made paper is an exciting but surprisingly simple project which can involve the whole family at various stages. The method is very similar to that used by the Chinese nearly 2000 years ago, and the resulting paper does not look like the commercial product. It has very special textures and colours which you can vary when you become skilled. No two sheets of hand-made paper can be exactly the same, and you will find every piece is individually fascinating to make.

Artists, especially water-colourists, often prefer to work on hand-made paper. The eminent Victorian water-colourist, Cotman, developed his own formula and 'Cotman' paper is still made today. Hand-made paper is especially suitable for painting and art work such as lino cuts or potato printing, and for making distinctive greetings cards. The strongest hand-made papers can be used in bookbinding for endpapers (see Paper chapters 43 and 44, pages 1714 and 1738), or in lampshade making, while the most decorative make beautiful and unusual mounts for pictures or pressed flowers.

## Choosing fibres

Basically, a sheet of paper is made by reducing fibrous materials to a fine pulp, spreading the pulp thinly on to a fine mesh mould, and leaving it to dry in the air. The most common commercial fibres are cotton, linen and wood pulp but for home-made paper all sorts of other fibres can be used. Plant fibres tend to produce the most textured papers, while materials such as old pillowcases make smoother papers, on which you can draw or paint.

If you decide to use plants from the garden, build up a store of things such as potato stems, iris leaves, montbretia and gladiolus leaves. Wild plants such as bulrushes, cow parsley and nettles are also suitable. Four or five long stems of cow parsley should make about 2 sheets of paper 25cm x 35cm (10″x 14″). The stems are the most useful part as they contain the most cellulose, or fibrous matter, which is the basic structure of all vegetable growths. If you intend to use plants it helps enormously if you have a place out of doors where they can be left to rot. Rotting will speed up the process of separating the fibres from the flesh.

Alternatively, you can pulp down old pillowcases and sheets or even towels. Paper can be made from a pair of old blue jeans or almost any pure cotton or linen material as long as it is not blended with any man-made fibres. A pillowcase should produce about six sheets of paper 25cm x 35cm (10″x 14″). Paper made from linen and cotton will be stronger and will have a smoother surface.

Another possibility is to re-cycle old paper by pulping it down and using it again. However, only papers without print or paint on them can be used.

Whatever you make your paper from, the pulping process is the same.

## The basic pulp

**You will need:**

Chopping board—wood or Formica.

Strong scissors.

Heavy-duty knife.

One or two galvanized buckets. (Do not use plastic ones since you will have to heat them.)

A pair of rubber gloves for each person.

A wooden mallet or meat tenderizer (neither item is essential but you may need to beat coarse fibres, such as cow parsley, to soften them).

Caustic soda—one tablespoon to 1 litre (2 pints) of water.

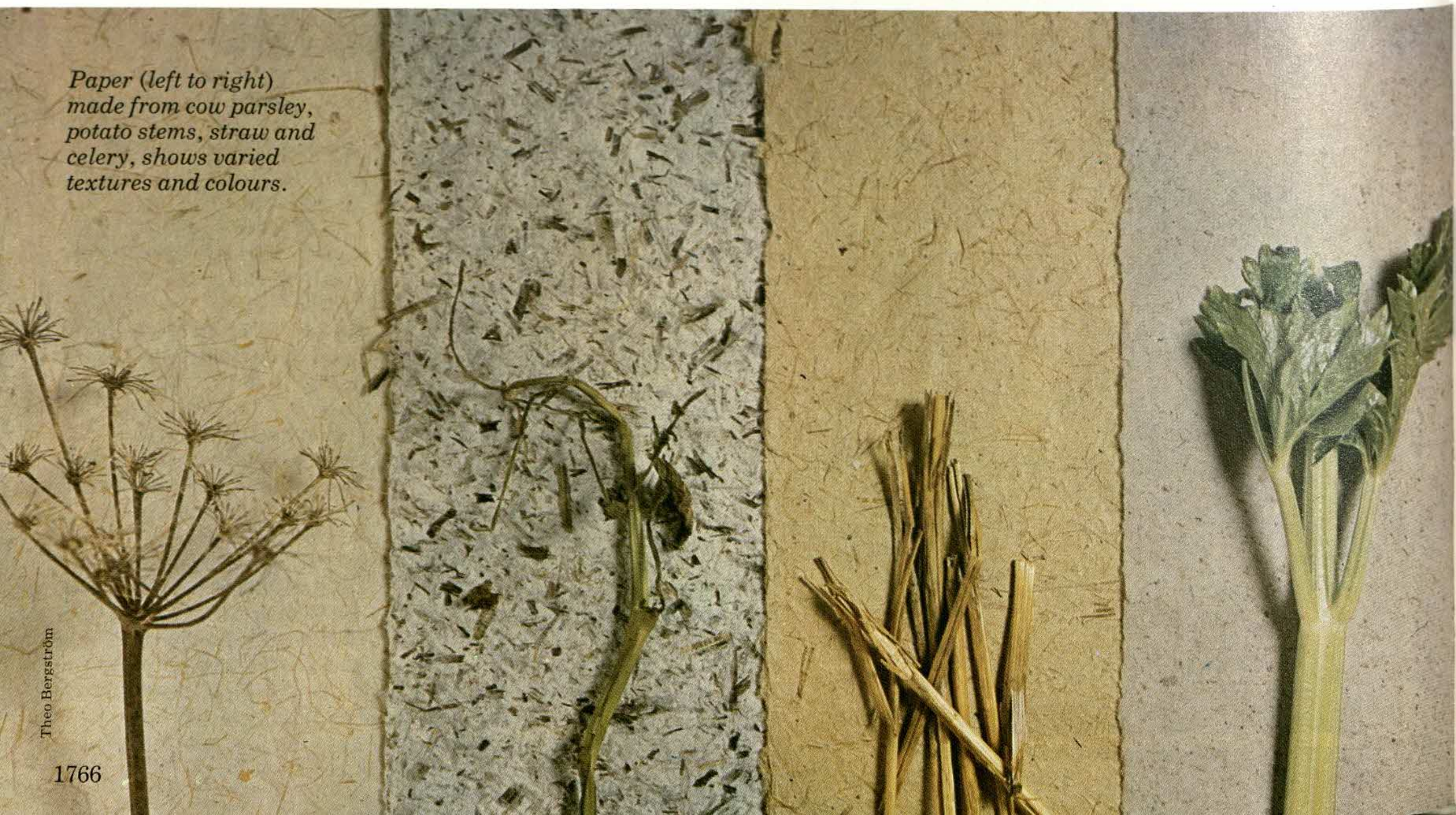
A large, coarse sieve, either nylon or metal.

Close-weave Terylene, about 60cm (23″) square.

Wooden spoon.

Fibres for pulping, either plants or fabrics.

Liquidizer or pestle and mortar.



*Paper (left to right) made from cow parsley, potato stems, straw and celery, shows varied textures and colours.*

Theo Bergström

Tate Gallery, London/John Webb

'*Ruin and Cottages, North Wales' by Cotman, on his own hand-made paper.*

### Preparing the fibres

☐ If you are using fabric, cut or tear it roughly into 2.5cm (1″) squares. If you are using plant fibres, cut or chop the stalks and other fibrous pieces into lengths of no more than 2.5cm (1″); the shorter they are the better. (You can use a mixture of both types of fibre.)

☐ Put the prepared fibres in a galvanized bucket, cover with water and, wearing rubber gloves, add the caustic soda. This softens the fibres and helps to separate unwanted fleshy material. **Caution:** do use caustic soda with extreme care. Do not let children add to or stir the contents of the bucket at this stage. An extra precaution is to half-fill the sink with cold water, put the bucket into it and then add the fibres, water and caustic soda. This prevents over-heating.

☐ When all the soda has dissolved, transfer the bucket to the stove and heat slowly, stirring all the time with a wooden spoon until it boils. Do not let the solution splash. Leave it to simmer for two to three hours.

If you are using cabbage stalks, be prepared for a fairly unpleasant smell!

### Straining and washing

Continue wearing rubber gloves for this process.

☐ Leave the contents of the bucket to cool a little and then carefully strain off the liquid from the fibres.

☐ Thoroughly wash out all traces of the caustic soda by running cold water through small quantities of pulp in the sieve, until as much of the colour as possible has gone from the fibres. Again, it is important to avoid splashes. Hold the sieve well down in the sink and run the tap quite slowly.

☐ When the pulp looks fairly clear, transfer it to the square of Terylene. Hold the four corners tightly together and continue squeezing out any surplus colour or fleshy material under a running tap. Only the stringy fibres are required.

Jerry Tubby

*When using fabric for paper making, it must first be torn into small squares.*

Jerry Tubby

*After washing the pulp, pound or liquidize a small quantity at a time.*

## Pounding the pulp

It is important to pound or liquidize the pulp in order to make it smooth, leaving only the occasional fine strand of fibre. You can determine the final finish of your paper by experimenting with the use of coarse or fine fibres.

☐ After the mixture has been washed, grind a small quantity at a time with a pestle and mortar or, preferably, use a liquidizer. If using a liquidizer, you must add plenty of water which can be drained away afterwards. Do not run the motor for more than 15 seconds at a time. Do not overbeat or liquidize if a coarse texture is wanted.

It is quite safe to use the liquidizer again for food, since the pulp will be completely clear of caustic soda at this stage.

## Colour

Once you have prepared the pulp you can decide on the colour of the paper. If only white cotton or linen is used the paper will be white, but if you are using vegetable fibres the colours will range from pale buff to yellow, brown or even bright green if leeks have been used. A plain, one-colour pulp will produce a paler shade of paper. If you wish, however, you can add more colour to all papers, with natural vegetable dyes such as onion juice, food dyes such as cochineal, or weaver's natural vegetable dyes. The amounts you use are a matter of personal taste, and you can experiment with mixing dyes until you achieve a pleasing result.

## Making a watermark

It is great fun to make a simple watermark in your hand-made paper. You do this by stitching a design (which could be your initials or a basic shape such as a circle) in copper fuse wire on your mould. Lay the wire on the mould and couch it down with fine stitches. Make the paper and leave it to dry as usual.

## To make a sheet of paper

**You will need:**

Prepared pulp.

A mould as described opposite.

A vat, which can be a large plastic meat or bread tray, a cold water storage tank, a plastic bath, a large enamelled kitchen sink, or your bath, if it is enamelled and non-metallic.

Two pressing boards, eg Formica off-cuts or chopping boards. These must be 5-7.5cm (2-3″) larger all round than the mould. (In commercial paper making, a press is used for squeezing out the water from the fibres, as well as to flatten them. These are very expensive, but you could use a bookbinder's press, a flower press, or even a trouser press, as an alternative if you wish.)

Blotting paper.

Culinary gelatine for sizing—30-40gm to 1 litre (1oz to 2 pints) of water—optional.

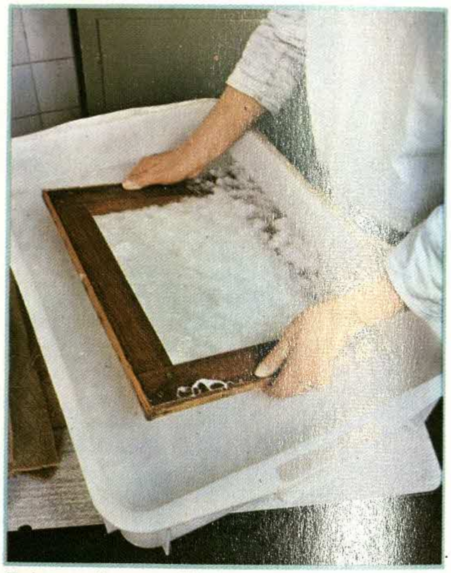
A flat, natural hair paintbrush.

An iron.

☐ Fill the vat three-quarters full with warm water.

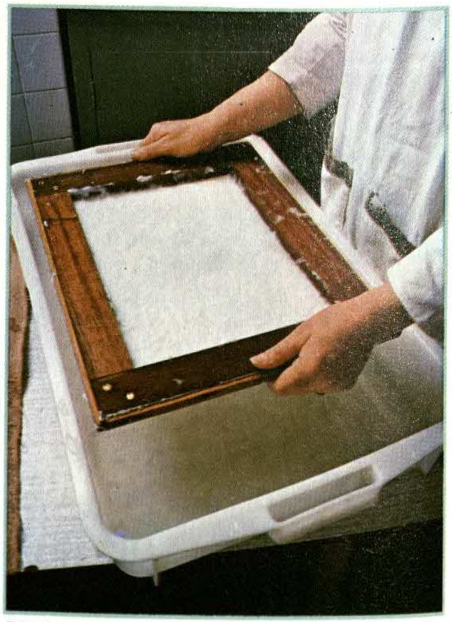
☐ Slowly add the pulp, remembering that the more pulp you use the thicker the paper will be. Begin by using a ratio of 0.25 litres (half a pint) of pulp to 4.5 litres (one gallon) of water for your first sheet. Stir the mixture slowly all the time to keep the pulp held in suspension in the water.

☐ Holding the mould vertically, with the mesh side away from you, lower it slowly into the water. Pull it under the surface of the pulp towards you horizontally and, keeping it level, lift it upwards and out.



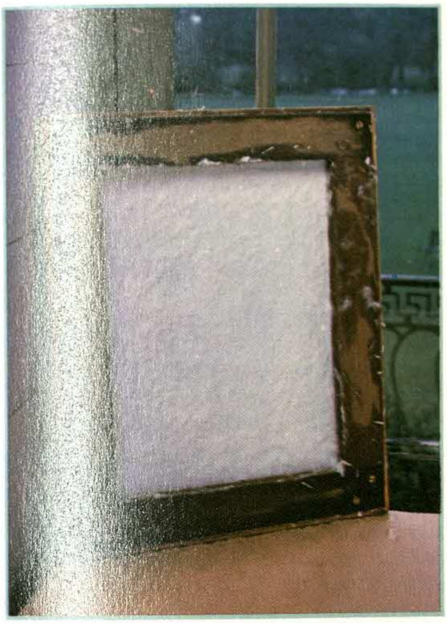
*Lower the mould into the water, then pull it under the surface of the pulp.*

☐ As you bring the mould up out of the water, move it slightly from side to side and backwards and forwards, to make sure that the fibres are evenly distributed. Practice will be needed to get an even layer of pulp over the whole area of the mould. If a dip is not successful, return the pulp to the vat, stir it in, and try again.



*Make sure you get an even layer of pulp in the mould, when lifting it out.*

☐ Hold the mould so that the surplus water drains away at one corner, then stand it up vertically to drain and dry. Ideally, air-dry your paper in the sun on a warm breezy day. Otherwise, stand the mould in a warm place, for example, near a radiator or over the stove with the oven on at a low heat.



*Stand the mould with the pulp vertically to drain and dry.*

☐ When the sheet of paper is dry, carefully remove it from the mould and lay it between sheets of blotting paper and pressing boards, in order to flatten it. Leave for about 24 hours.

You have now made a sheet of paper called a waterleaf. No matter what the results are like at first, producing your first sheets of paper is a very exciting experience. With practice, and the use of different fibres, you will learn how to make many different kinds of paper.

## Sizing

Paper can be sized or not, depending on its future use. Paper can be left unsized and used for printing or painting if the ink or paint is not water based. If paper is sized it can be used for writing with ordinary ink. It is a good idea to size papers which are to be used in bookbinding or lampshade making.

☐ Hot press the paper with an electric iron set at 'cotton'. This gives a smooth surface.

☐ Brush over both sides of the sheet with a warm solution of gelatine, using lengthwise strokes. Do not apply too much gelatine and try not to overlap the strokes, but make sure you have covered the whole surface.

☐ Hand press the paper between clean sheets of blotting paper and hang it up for about an hour or until dry.

☐ Iron the paper again if necessary.

## Making a mould

To make paper by hand, commercially, requires a very expensive, hand-made mould to set the pulp into the required shape. However, you can make your own mould at home, from hardwood. A size which you can easily handle is about 36cm x 25cm (14"x 10").

**You will need:**

A strip of hardwood such as mahogany, 50mm x 40mm (2"x 1½") and about 122cm (4') long. This is for the frame.

Four strips of wood beading of appropriate size, two to the width and two to the length of the frame.

Brass screws and screwdriver.

Waterproof adhesive, such as Bostik or Copydex.

Close-weave, fine-mesh, white Terylene, such as that used for curtaining, 8cm (3¼") larger than the frame all round, ie 52cm x 41cm (20½"x 16½") for a frame this size.

Tacks and hammer.

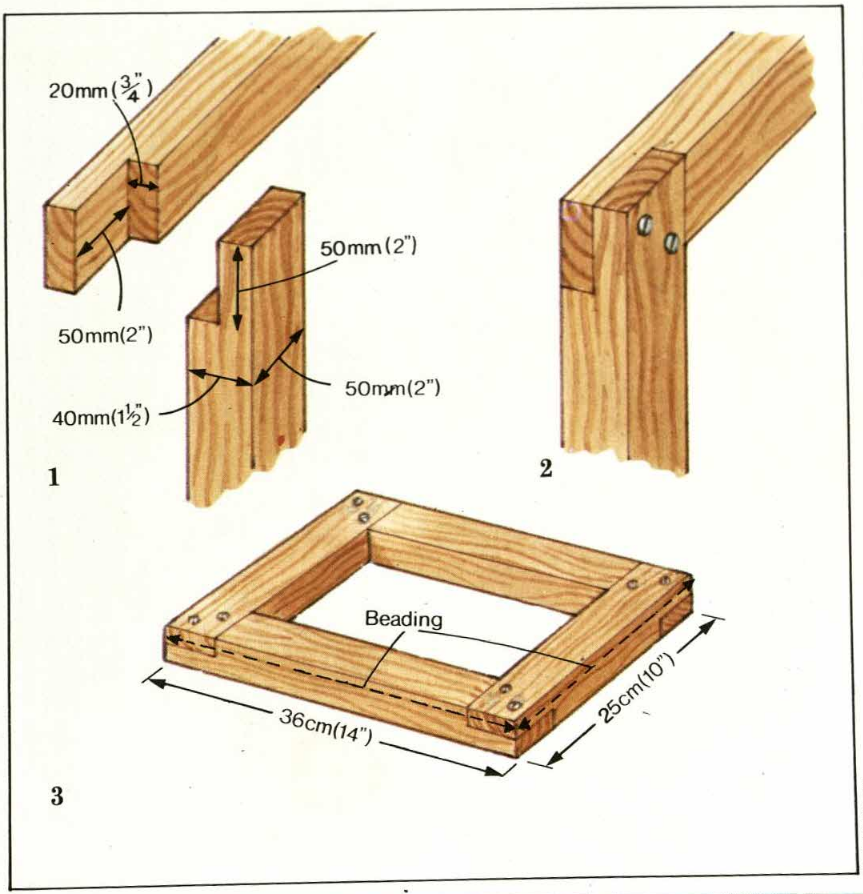
A tenon saw.

☐ Saw the hardwood strip into four lengths, two 36cm (14") long and two 25cm (10") long.

☐ Use a half-lap joint to make the four corners in the hardwood (fig.1) and fix the frame together with brass screws and adhesive (fig.2).

☐ Cover the frame with the close-weave Terylene which you have already washed to remove the dressing. Stretch it over the frame and hold it in place with tacks, keeping the material as taut as possible.

☐ Tack the strips of wood beading to the sides of the frame, over the edges of the mesh (see fig.3).



Paul Williams

## Some paper making terms

**Hot pressed:** paper with surface smoothed by ironing.

**Rotting:** partial disintegration of vegetable leaves and stalks.

**Vat:** any container holding the pulp for paper making.

**Waterleaf:** newly made, unsized paper.

**Watermark:** copper wire design, stitched to a mould with thread, which is then reproduced in the paper as a partial transparency over the area of the design. (Its original purpose was to indicate the maker or the size of the paper.)

**Mould:** the rectangular wooden frame, covered with stretched Terylene mesh, on which the paper is made.

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**Leather 5**

# Thonging thick leather

Sandra Lousada

*The thonged leather bag is ideal for casual wear. Designed by David Boot.*

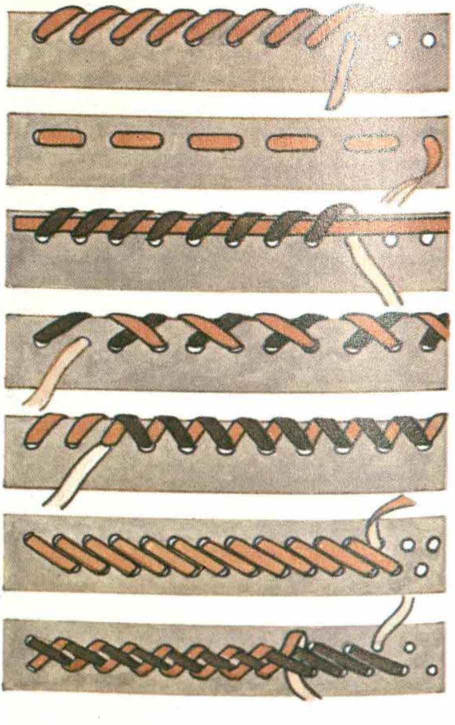
Thonging is a method of sewing or decorating leather using thin strips of leather woven in and out of round holes or slits. Thin strips of leather, or thongs, can be bought in reels from leather craft shops, or they can be cut from a piece of leather using a sharp knife, steel rule and pair of dividers. For instructions on cutting leather see Leather chapter 4, page 1710.

The round holes for the thonging can be made with a revolving punch, used in the previous leather chapter to make holes for rivets. The slits can be made with a thonging tool which is pronged and looks rather like a fork. To make slits, this tool is placed upright with the teeth on the surface of the leather, and the other end is hit with a hammer or mallet.

The size of the slits or round holes must correspond to the width of the thonging used: the slits should be as wide as the thonging, the holes can be slightly narrower than the thonging.

Fig.1 shows various styles of thonging which can be done through holes or slits. It is possible to build up an interesting and decorative pattern by combining different thonging styles or using thonging in a variety of colours.

Oversew thonging is the most usual and simplest style and is the one used for the thonged bag shown here. The thonging on the bag is done through round holes as this is the more suitable method when working with thick leather.



1. *Several styles of thonging, some plain, others more decorative, which can be done with thick or thin leather through holes or slits. Holes must be evenly spaced for best effect.*

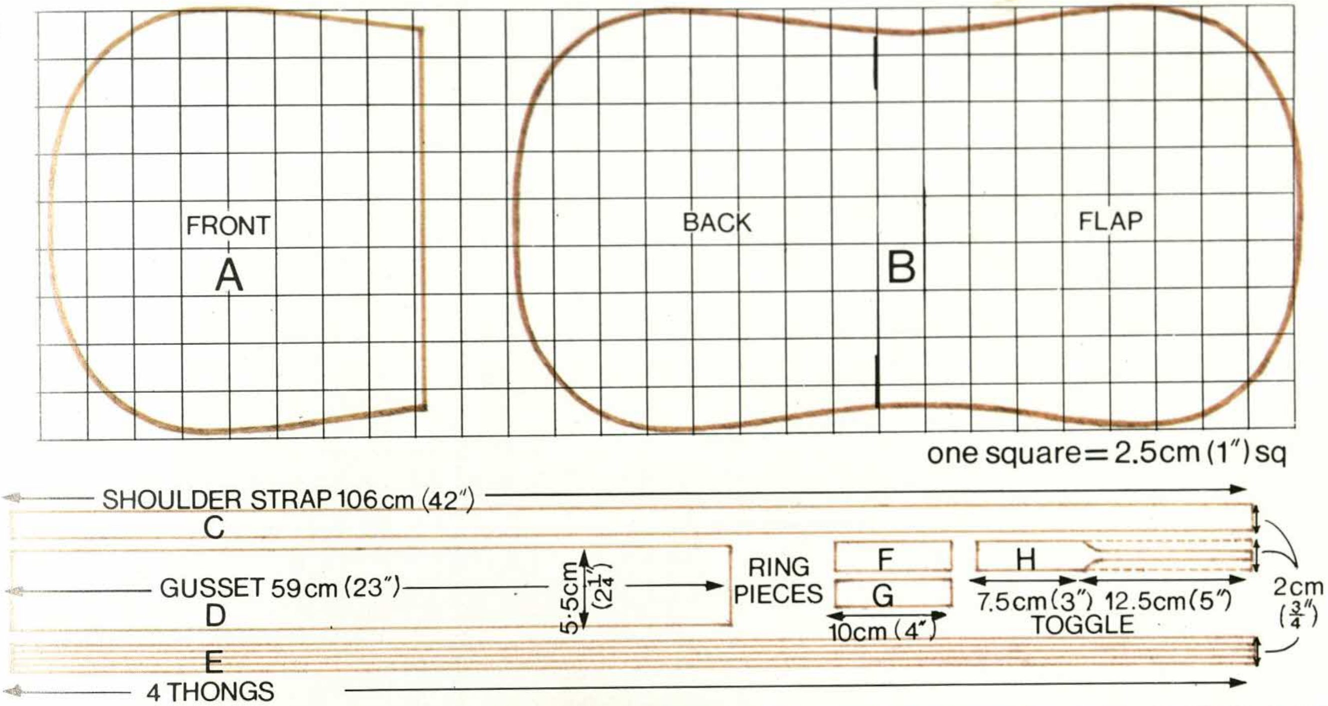
## A thonged bag

This bag includes techniques for thonging with cow-hide, and for making a loop and toggle for fastening. 2mm ($\frac{1}{16}''$) leather is used. If you wish to make the bag of thicker leather then you must either buy the thonging or cut it from a thinner skin.

**You will need:**
Revolving punch, sharp knife.
Medium grade glasspaper or edge shave.
Steel rule.
Pair of dividers with adjustable screw.
Adhesive tape such as Sellotape.
Cloth for polishing.
Large sheet of paper, soft pencil.
Piece of chestnut cow-hide large enough to take pattern pieces (fig.2), 2mm ($\frac{1}{16}''$) thick.
Two brass rings with 4cm ($1\frac{1}{2}''$) outside diameter.
Scotch glue.

☐ Draw pattern pieces in fig.2 to size on a piece of paper. For pieces A and B enlarge the pattern in fig.2. Cut out pieces.

2



☐ Arrange the pattern pieces on the grain side of the leather. If you are using the shoulder bought for the belts in the previous chapter, follow fig.3 to arrange pieces.

☐ Secure each pattern with a few small pieces of adhesive tape and lightly draw round the patterns with a soft pencil.

☐ Remove the pattern pieces and cut along the pencil lines.

☐ For pieces C to H, all the lines are straight, so a pair of dividers, a steel rule and a sharp knife can be used for cutting.

☐ For pieces A and B, cut along the curved line with a sharp knife trying to keep the line as smooth as possible.

☐ Smooth off any rough edges with an edge shave or medium grade glasspaper.

☐ Using the Scotch glue and a cloth, seal and polish the edges of the shoulder strap (piece C), the two leather ring pieces (F and G), and the top of the front piece (A).

☐ Draw a line on the flesh side of the back piece (B) to mark the division between the back and the flap, 20cm (8″) from one end. The slightly smaller half is the back and the other half is the flap.

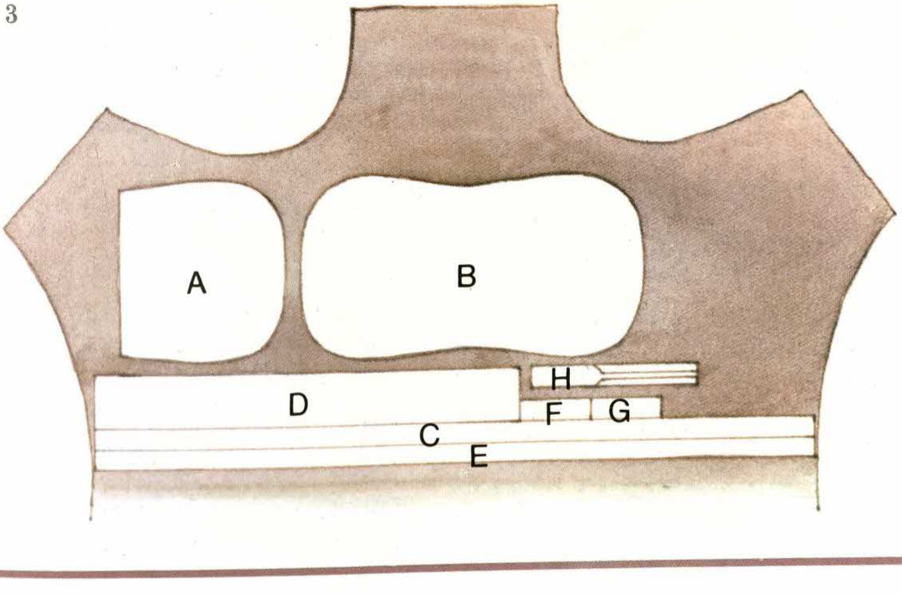
**Punching the holes.** The holes for the thonging are punched with a revolving punch and must be slightly smaller than the width of the thong to ensure a snug fit. Avoid punching very large holes as this will weaken the edges of the leather. For the bag, the holes are 3mm ($\frac{1}{8}''$) diameter and the thonging is 5mm ($\frac{3}{16}''$) wide.

When sewing two pieces of leather with thonging, the holes punched in each piece of leather must correspond or the thonging will look uneven. To make sure that the holes will be the same distance from the edge, a line is scored round the edge and the holes are punched along the scored line.

☐ Set dividers to 6mm ($\frac{1}{4}''$) and score a line on the grain side round the curved edge of the front piece (A).

☐ Using the revolving punch, punch holes of 3mm ($\frac{1}{8}''$) diameter along the scored line at intervals of 3mm ($\frac{1}{8}''$).

3



Barbara Firth

☐ Place the front piece on the back piece (piece B), grain sides together, aligning the edges as shown in fig.4.

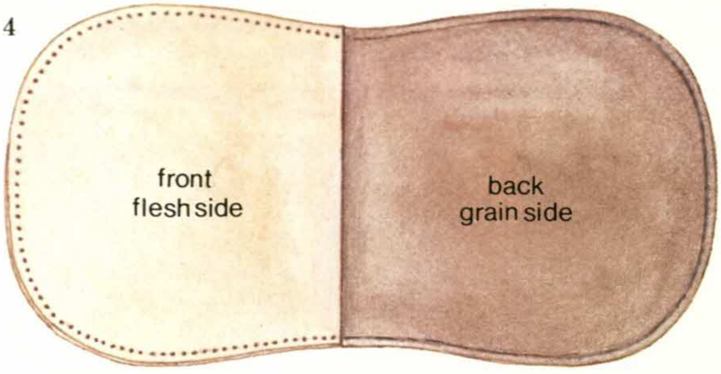
☐ Using the point of the dividers, make a mark through each punched hole on to the grain side of the back piece.

☐ Remove the front piece and punch holes on marked points using the revolving punch.

☐ Punch holes in the flap along scored line, 3mm ($\frac{1}{8}$") apart.

☐ Punch two holes in the front piece for the fastening 1.3cm ($\frac{1}{2}$") apart, 1.3cm ($\frac{1}{2}$") from the edge (fig.5).

4



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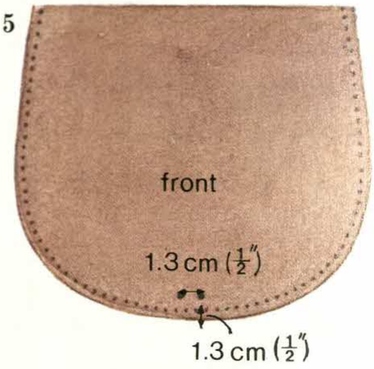


☐ Take the gusset (piece D) and make sure one end is square. The other end will be cut square when the gusset has been thonged to the bag.

☐ Set the dividers to 6mm ($\frac{1}{4}$") and score a line on the grain side along both long edges of the gusset.

☐ Punch holes along the scored line, 3mm ($\frac{1}{8}$") apart to correspond with the holes in the back and front pieces.

**Thonging.** The pieces are now ready to be thonged together.

☐ Cut one end of a piece of thonging to a point.

☐ Place the back piece and the gusset, flesh sides together, with the square end of the gusset coming up to the line drawn across the back piece.

☐ Start thonging with the oversew method, securing the end as shown in fig.6. Always keep the grain side of the thonging on the outside.

☐ Continue thonging round the edge until you reach the line on the other side of the back piece where the gusset should end.

☐ Trim off the gusset at the required point and continue thonging round the flap of the bag.

☐ When you reach the point where you started, finish off thonging as shown in fig.7.

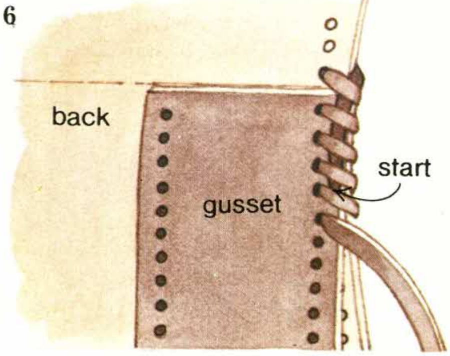
☐ Use the same methods for starting and finishing if you have to start a new piece of thonging while thonging round the bag.

☐ Start thonging the front piece of the bag on to the gusset in the same way.

☐ When you get to the centre front punch two holes in the gusset, 1.3cm, ($\frac{1}{2}$") from the edge and 1.3cm ($\frac{1}{2}$") apart, to correspond with the holes in the front piece for the fastening.

☐ Continue thonging up the other side of the front piece and finish off as previously described.

6



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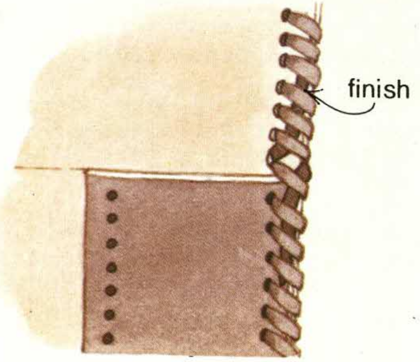


**Making the fastening.** The flap of the bag is secured with a loop and a toggle.

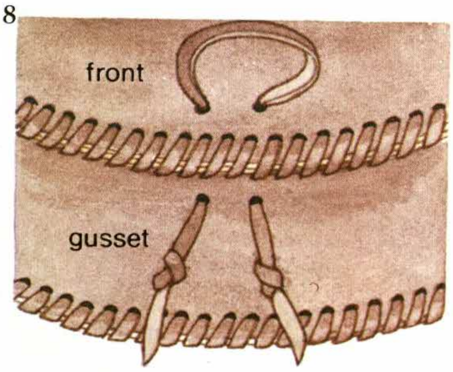
☐ Take a piece of thonging about 25cm (10") long and knot one end.

☐ Following fig.8, thread the thong through the holes in the front of the bag and the gusset, and knot the other end to make the loop.

☐ To make the toggle, roll up the wide end of piece H and punch a hole through the rolled-up piece.

☐ Thread the other end through the

8



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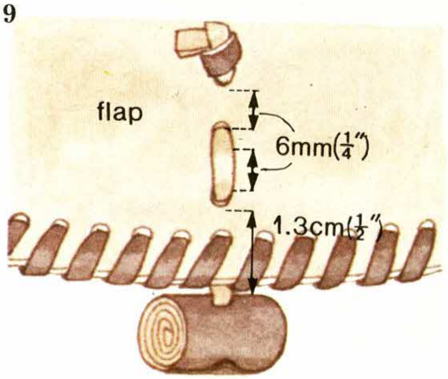

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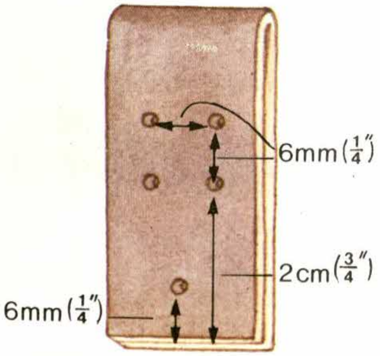


Barbara Firth

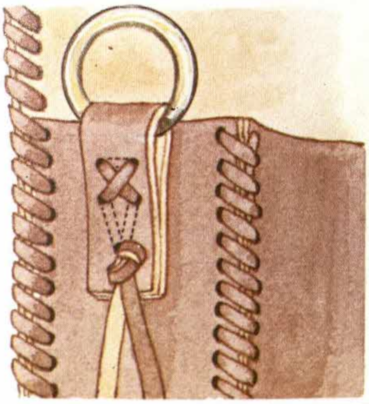
*The bag is made of vegetable tanned cow-hide which wears well.*

Geoffrey Frosh

hole and pull tight.

☐ Punch three holes down the centre of the flap, 6mm ($\frac{1}{4}$″) apart, with the first hole 1.3cm ($\frac{1}{2}$″) from the edge.

11



☐ Thread the end of the toggle through the three holes and knot the end (fig.9). This completes the fastening.

**The shoulder strap** (piece C) is now attached to the bag.

☐ Fold the ring pieces in half, flesh sides together, and punch five holes in each piece (fig.10).

☐ Punch five corresponding holes in the top of the gusset, on both sides of the bag.

☐ Thread one ring piece through a brass ring, and fold in half, flesh sides together, so that the punched holes correspond.

☐ Place the ring piece against one end of the gusset so that the holes in the ring piece correspond with the holes in the gusset.

☐ Following fig.11, attach the ring piece to the gusset with a piece of thonging about 40cm (15″) long.

☐ Attach the other ring piece in the same way.

The shoulder strap is now attached to the brass rings.

☐ Fold back 4cm ($1\frac{1}{2}$″) of one end of the shoulder strap, flesh sides together.

☐ Punch holes as for the ring piece.

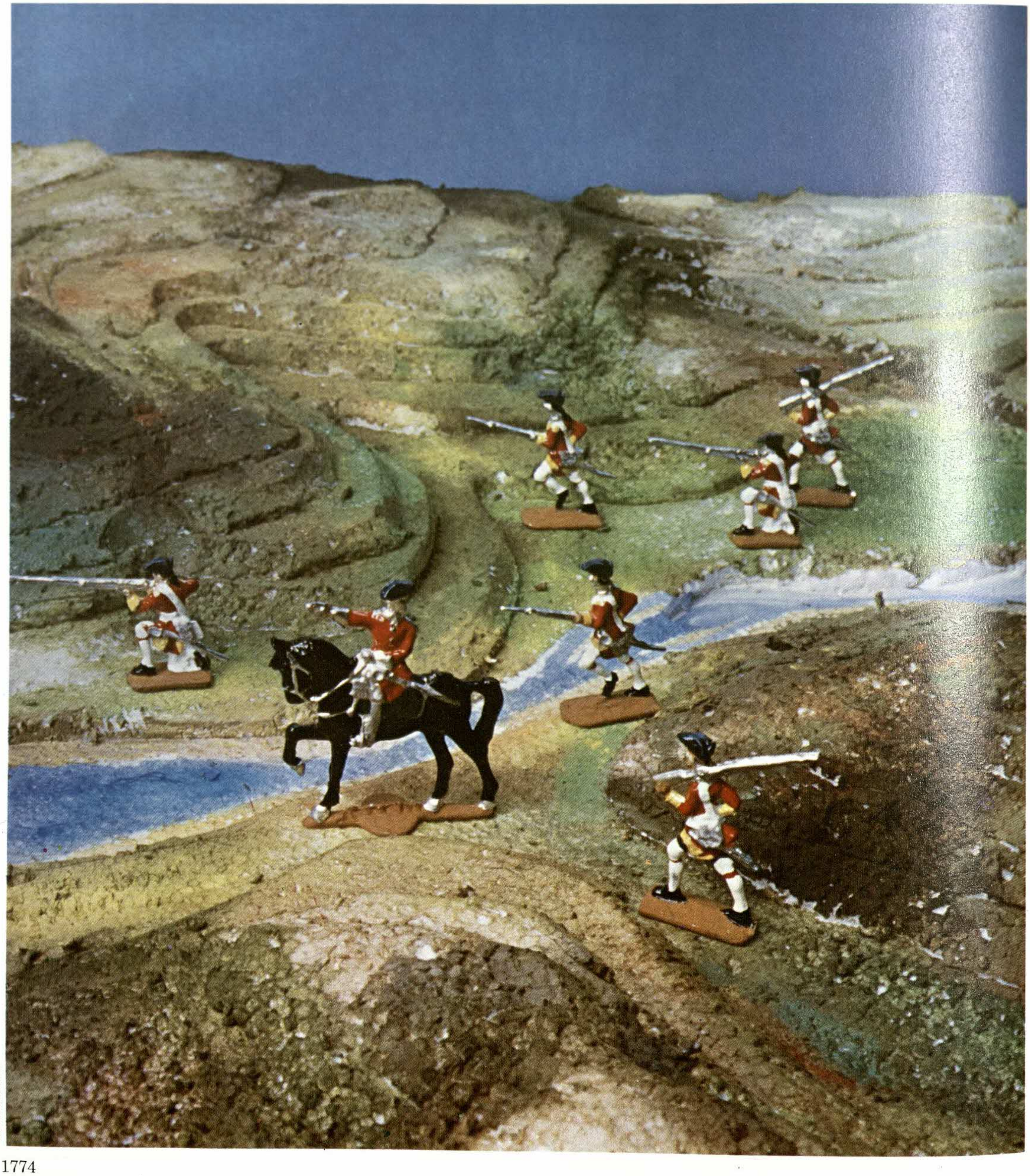
☐ Thread the end of the strap through the brass ring and fold back flesh sides together so that the punched holes correspond.

☐ Thread a piece of thonging through the punched holes in the same way as for the ring piece.

☐ Attach the other end of the shoulder strap to the other brass ring, making sure that the shoulder strap is grain side outermost.

# Tin casting using bought moulds

Casting is one of the oldest of metal forming techniques and one of the simplest. Until craftsmen realized that metal could be melted and poured into a prepared mould—casted—they were confined mostly to forging metal, ie heating and beating the metal into shape. 5000 years ago moulds were cut out of a soft rock called Tufa or formed from sand. The ancient methods of using clay and sand in which to pour



Geoffrey Frosh

the molten metal are still in use today both by individual craftsmen and in industry for the making of large pieces of machinery.

## Toy soldiers

To introduce the basic techniques of metal casting it is useful to begin working with cheap metals and ready-made moulds. One of the most readily available moulds is for casting tin toy soldiers. These moulds are made from vulcanized rubber which is extremely durable and able to withstand high temperatures.

An interesting range of toy soldiers is available including sets of period soldiers. The finished objects can be painted with enamel and placed on a mock battlefield constructed from a polystyrene map as shown here.

**The metal:** the metal used here is known as white metal or Babbit's metal. This is an alloy made up of tin, lead and a small percentage of antimony. White metal is also called plumber's solder and is obtainable from plumber's merchants. Because of its low melting point it is ideal to begin metal casting.

**The mould:** the procedure for making moulds for casting is complex and is dealt with in later chapters. Here, the metal is cast in a special rubber mould purchased from a manufacturer. If you look carefully at the inside of this rubber mould you will see a number of inter-leading channels.

These channels are strategically placed so that when the metal is poured into the mould the air in the mould is not trapped but can be led off, thus allowing the metal to flow freely into all the parts of the mould.

These inter-leading channels and the opening through which the metal is poured are called sprues.

**You will need:**

A small, lipped metal container to melt the metal in, preferably with a long or heat-resistant handle.

Some scrap white metal or lead.

Talcum powder.

Two pieces of hardboard to clamp the mould between.

A vice, G-clamp or rubber bands.

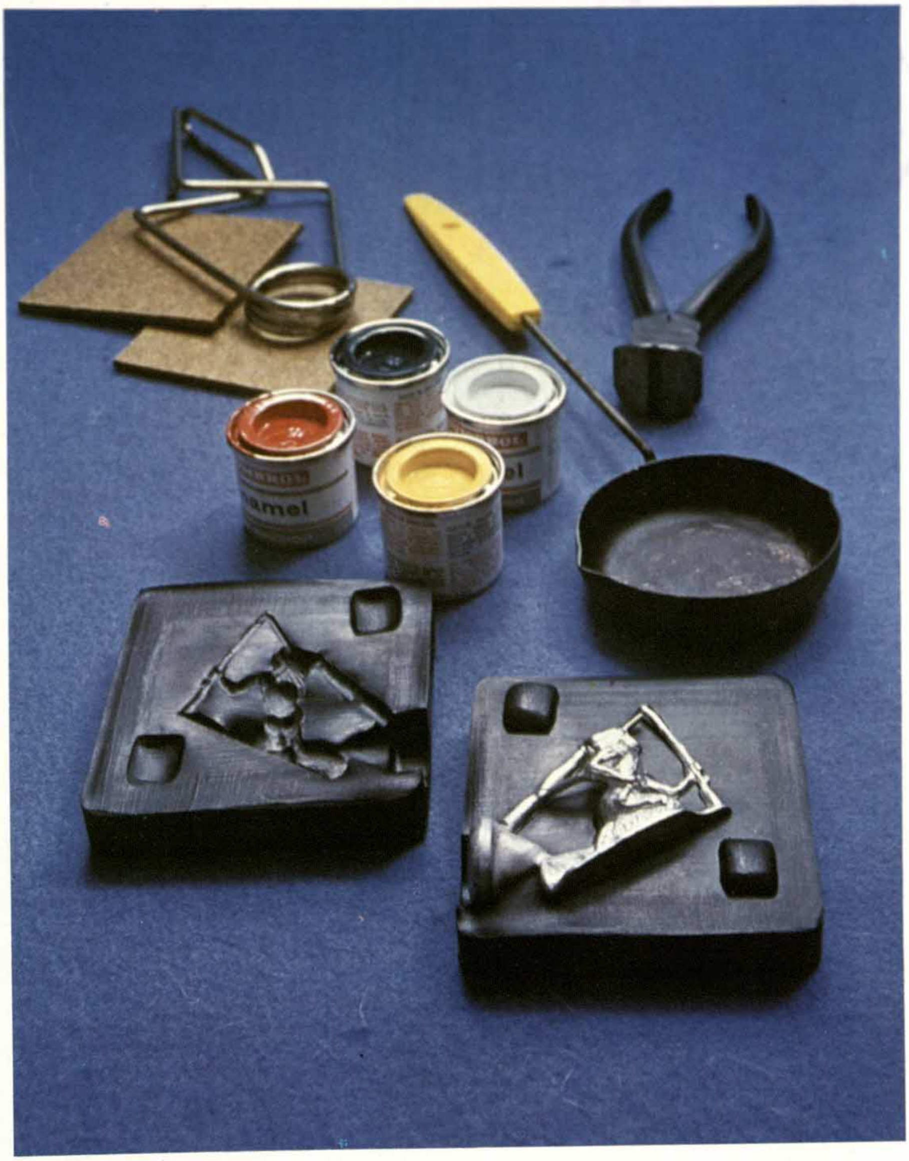
Tin snips and a flat needle file to tidy the mould after casting.

Enamel paint and a fine paintbrush.

Blowtorch or gas cooker to heat the metal.

☐ Dust the inside of the mould with the talcum powder. The powder acts as a release agent as does grease around the inside of a baking tin.

*Cast toy soldiers, after being painted in the appropriate colours, can be placed on a model battlefield. The setting shown opposite was made from polystyrene painted with powder paints.*



*A model, still in the mould after being poured, exhibits 'rods' formed by the sprues. The rods are cut with tin snips.*

☐ Clap the two halves of the mould together to remove any excess powder.

☐ Join the two halves of the mould, placing the two pieces of hardboard on either side and fastening in a vice with the funnel opening upwards. If you do not have a vice, use a clamp or even a couple of rubber bands wound round the mould.

Be careful that the mould stands firmly upright and does not tip over when you pour the metal into it.

☐ Heat the metal in a container over a blowtorch or the flame from a gas plate. As the metal has a low melting point it should be ready within a few minutes.

☐ Stir with a wooden stick. The metal is ready to be cast if the stick smoulders when taken out of the metal.

☐ Pour the metal into the opening at the top of the mould, known as the reservoir. Keep pouring until a small button of metal lies at the bottom of the reservoir.

☐ Leave the mould to cool naturally for at least five minutes.

Note: at no stage during the casting should the mould or cast figure be plunged into cold water to speed up the cooling process.

☐ Remove the mould from its clamp and take out the metal figure.

☐ The metal figure will have a number of protrusions formed by the sprues (as seen in the picture), the largest one near the opening being called the jet. Trim these off with tin snips and, if necessary, use a flat needle file to smooth any rough edges. The filing must be done carefully as the metal is very soft.

☐ Use enamel paint and the fine paintbrush to paint the soldiers in their 'true colours'. Allow to dry according to manufacturer's instructions.

The model is now ready to be placed on the battlefield.

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# Rugs with a pile surface

Among the more unusual needlepoint stitches are those which create a pile surface. These stitches can be used in small areas with flat stitches to give interest to pictures or wall hangings or they can be worked all over heavy gauge canvas to make a hard-wearing rug as shown here.

Although the pile made by latch-hooking with short lengths of yarn and that made by needlepoint with longer lengths is similar unless examined closely, there are some advantages in working by needlepoint.

With needlepoint it is possible to use finer gauge canvases and finer yarns which allow more intricate detail in the pattern; needlepointing is easier on the hands than latch-hooking and many people also find it quicker.

## Materials

All the materials for needlepoint pile rugs are the same as those used for smooth-faced rugs, described in Needlepoint chapter 8, page 1760.

## Working a rug

Prepare the foundation fabric before stitching the pile and work the edging stitch as described in Needlepoint chapter 8, page 1760. Work an inner row of cross stitch all round the edge to support the outer pile stitches.

Work the pile in rows across the width of the canvas, cut the loops and trim the pile if necessary after each row.

**The pile length.** The pile should not be shorter than 1.5cm (½") on fine gauge canvas or 2cm (¾") on jute backing and coarser canvases to give good wear and not pull out. For a shaggy rya-type rug the pile can vary between 5cm-7.5cm (2"-3") in length.

For a pile up to 2.5cm (1") long work the rows of stitches on every double bar of canvas, or on each pair of double threads of jute backing, down the length of the rug.

For a longer rya-type pile alternate each row of stitches with two rows of long-legged cross stitch (Needlepoint chapter 8, page 1760). The long-legged cross stitch will not show on the finished rug but is worked to prevent the pile from becoming too bulky and tangled.

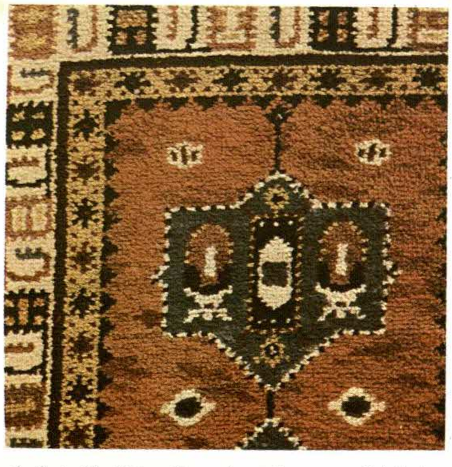
Where you are making a rug which combines pile stitches with smooth-faced stitches, always work the flat areas first and then fill in the areas with pile stitches.

## Stitches

There are two basic stitches which are used to form a pile surface: the Ghiordes (pronounced yoor-dez) or Turkey knot, and the Surrey stitch knot. The working details of both stitches are shown in the box overleaf.

**The Surrey stitch knot,** so named because it was devised by a member of a Surrey Women's Institute, can be used to form the pile on all types of canvas and on a jute backing.

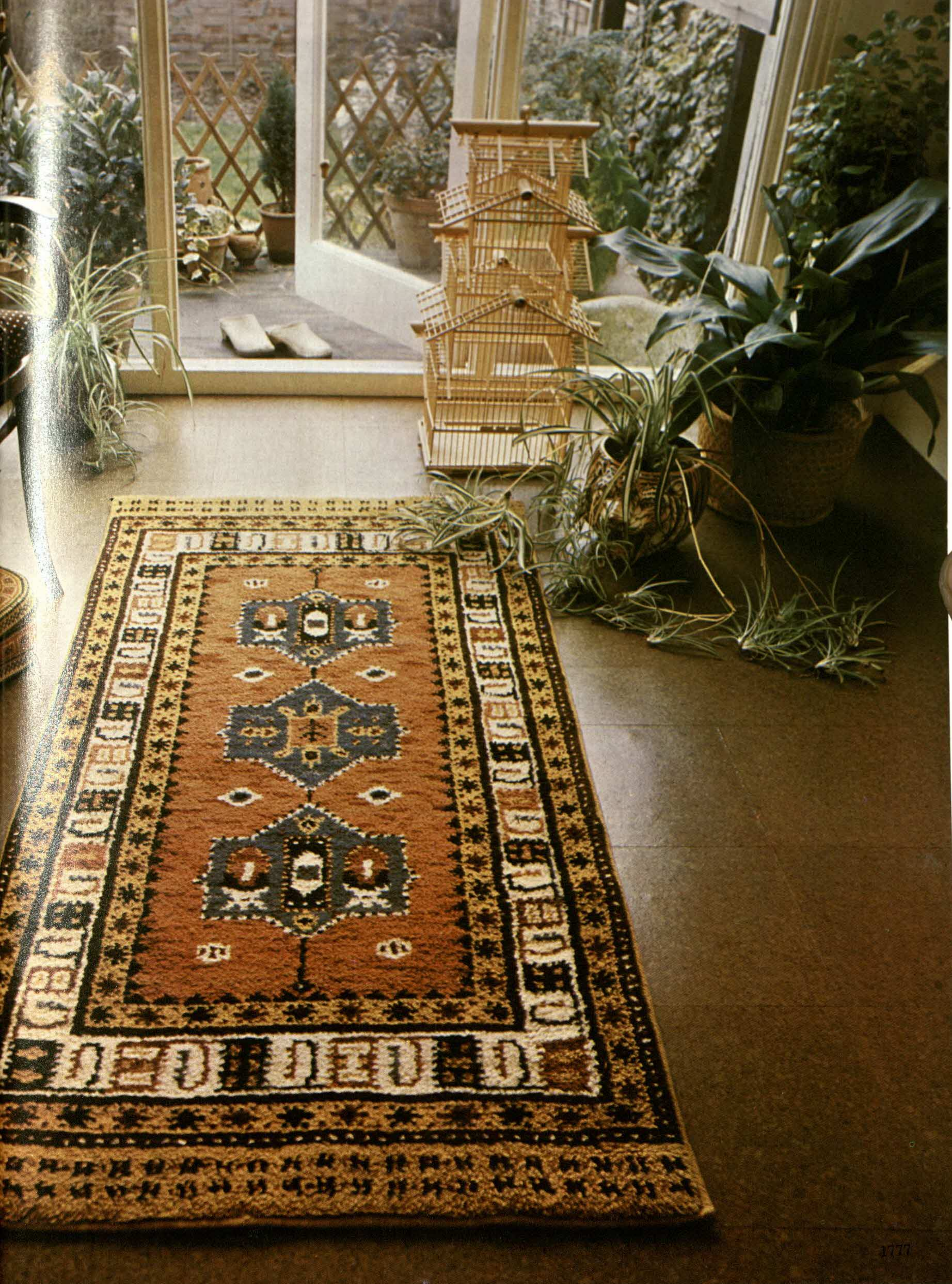
**The Ghiordes knot** originated in Turkey and is the classic knot used in all kinds of rug making. It is a quicker knot to work than Surrey stitch but it is best used only for short pile rugs made with two-ply yarn on a fine gauge canvas where one or two strands of yarn only are used in the needle. It should not be used on heavier gauge canvas where six-ply yarn or several strands of two-ply yarn are used because the thickness of the yarn passing between the double mesh bars would distort the weave of the canvas.

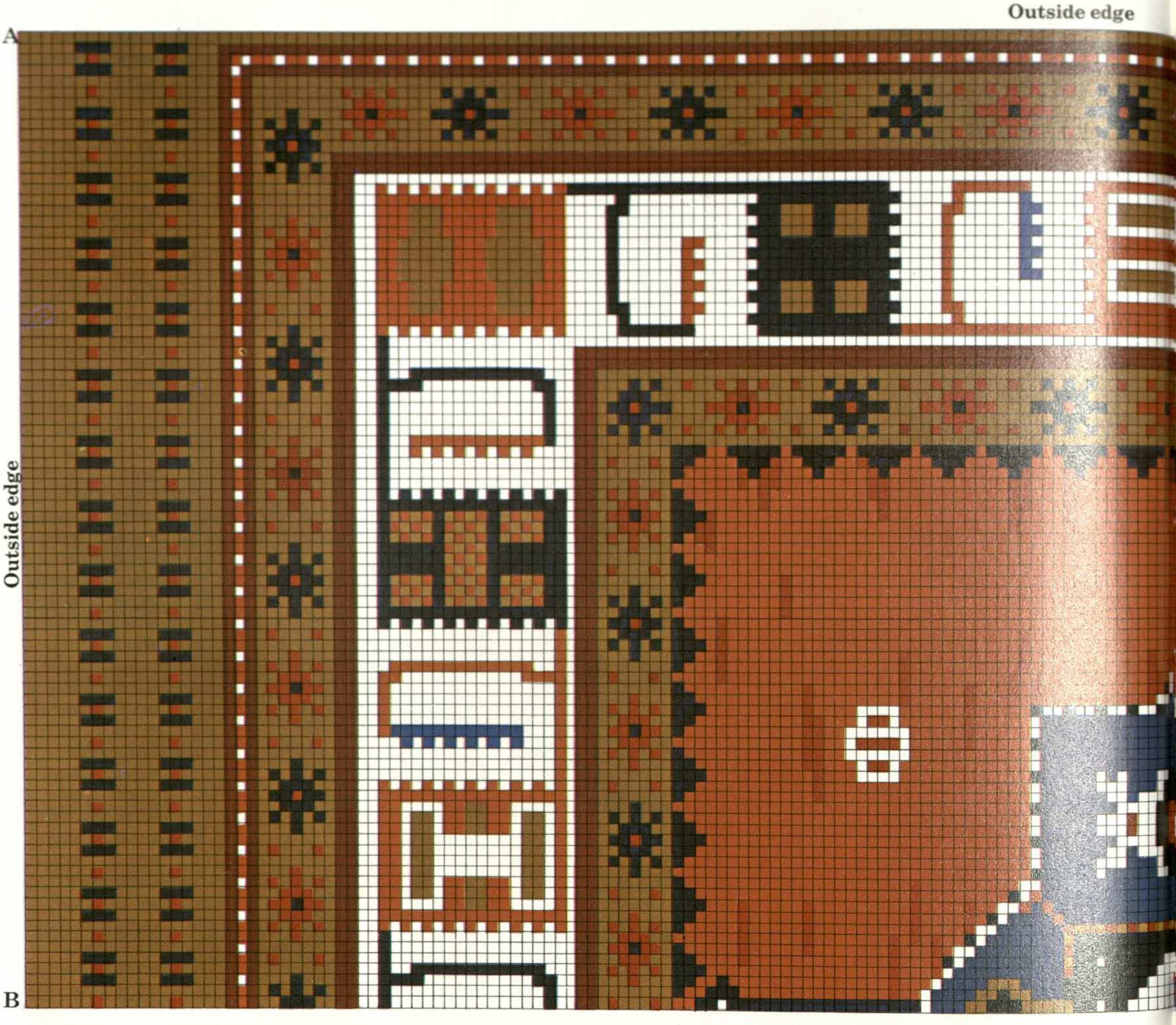


*A detail of the Kazak style rug which is worked in Surrey stitch with a pile 2cm (¾") long. The chart and instructions are given overleaf.*

*The design for this richly-coloured rug by Mary Poole was inspired by the traditional colourful patterns of rugs worked in the Kazak region.*

Geoffrey Frosh





## Surrey stitch

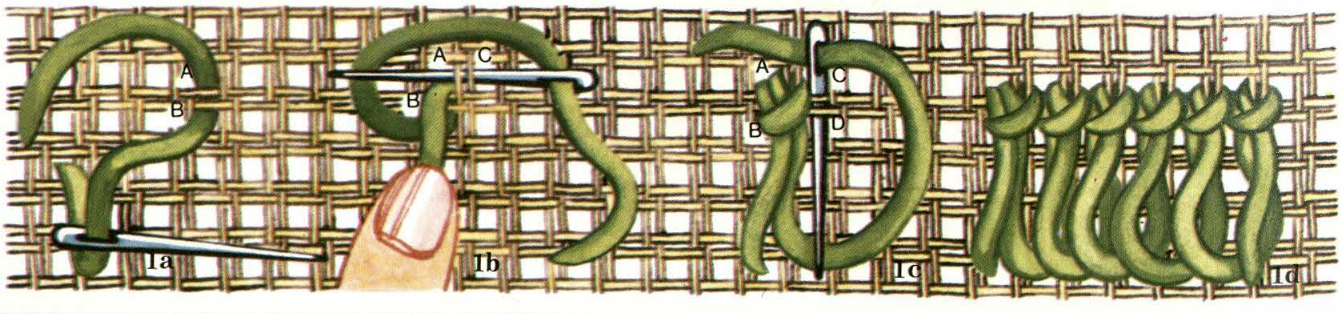
Work the rows from left to right.

**First movement.** Bring through the needle under the first double weft bar. Pull through from A to B, leaving a tail of the required pile length (fig.1a).

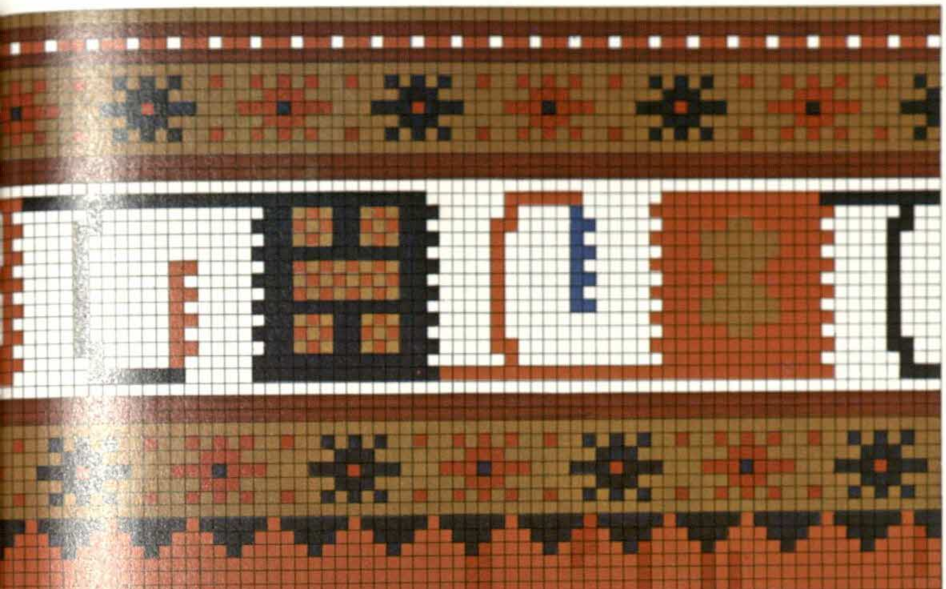
☐ Loop the yarn round to the left and bring down the tail over the bar. Hold with your left thumb.

**Second movement.** Insert the needle at position C and bring it out at position A, passing the needle over the loop of yarn (fig.1b). Pull the needle down towards you to form a knot.

☐ If you are working a single stitch, cut off the yarn leaving a tail of the required pile length. If you are working a second stitch, loop the yarn round to the right, re-insert the needle at position C, bring it out at D and through the loop (fig.1c). Pull the needle through until the loop is the same length as the pile, hold the loop and pull the needle to tighten the stitch. Continue with the second movement of the stitch as shown in fig.1b. Fig 1d shows several stitches worked.



Coral Mula



## Kazak rug

Finished size: 182.5cm x 92.5cm (73"x 37").

**You will need:**

2 metres (2¼yd) double mesh canvas, 100cm (40") wide with 5 holes per 2.5cm (1").

Two-ply Axminster rug wool: 1400gm (3lb) each gold and salmon pink; 450gm (1lb) each bright red, saxe blue and wine red; 700gm (1½lb) each white and dark blue. (These quantities are for a pile of 2cm (¾") long.)

Seven tapestry needles, No.14 size.

All stitches are worked with two strands of yarn, so thread each needle with two strands of one colour. The chart shows a quarter of the rug design which is repeated in mirror image on the remaining quarters.

☐ Prepare the top and side edges of the canvas. Work the plaited edging stitch and inner row of cross stitch in the gold yarn (these rows are not shown on the chart).

☐ Place the canvas with the top edge nearest you. Work in Surrey stitch in the colours shown on the chart, starting at point A on the left-hand side of the canvas. When you reach point B, complete the first row by repeating the pattern in mirror image to the right-hand edge.

☐ Stitch the remaining rows in a similar way for the first half of the rug.

☐ To complete the rug, repeat the first half in mirror image to the bottom edge. Remember to count the remaining rows of pattern required and turn up the bottom edge accordingly when you are 7.5cm (3") from the end of the rug.

Trevor Lawrence

*Working chart for a quarter of the Kazak rug (the remaining quarters are worked in mirror image). Each square represents one Surrey stitch.*

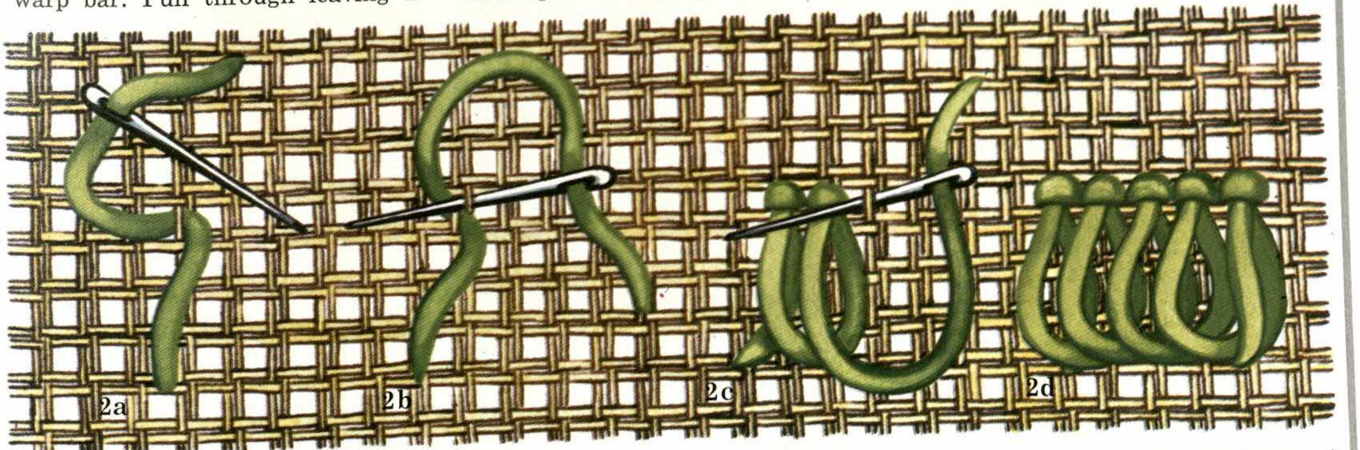
### Ghiordes knot

Work the rows from left to right.

**First movement.** Insert the needle from right to left, splitting the first warp bar. Pull through leaving a tail of the desired length (fig.2a).

**Second movement.** Loop the yarn round to the right and insert the needle from right to left into the same split bar (fig.2b). Pull the yarn firmly to secure the stitch.

Cut the yarn leaving a tail of the desired pile length or leave a loop of the required length and pass to the next stitch (figs.2c-d).



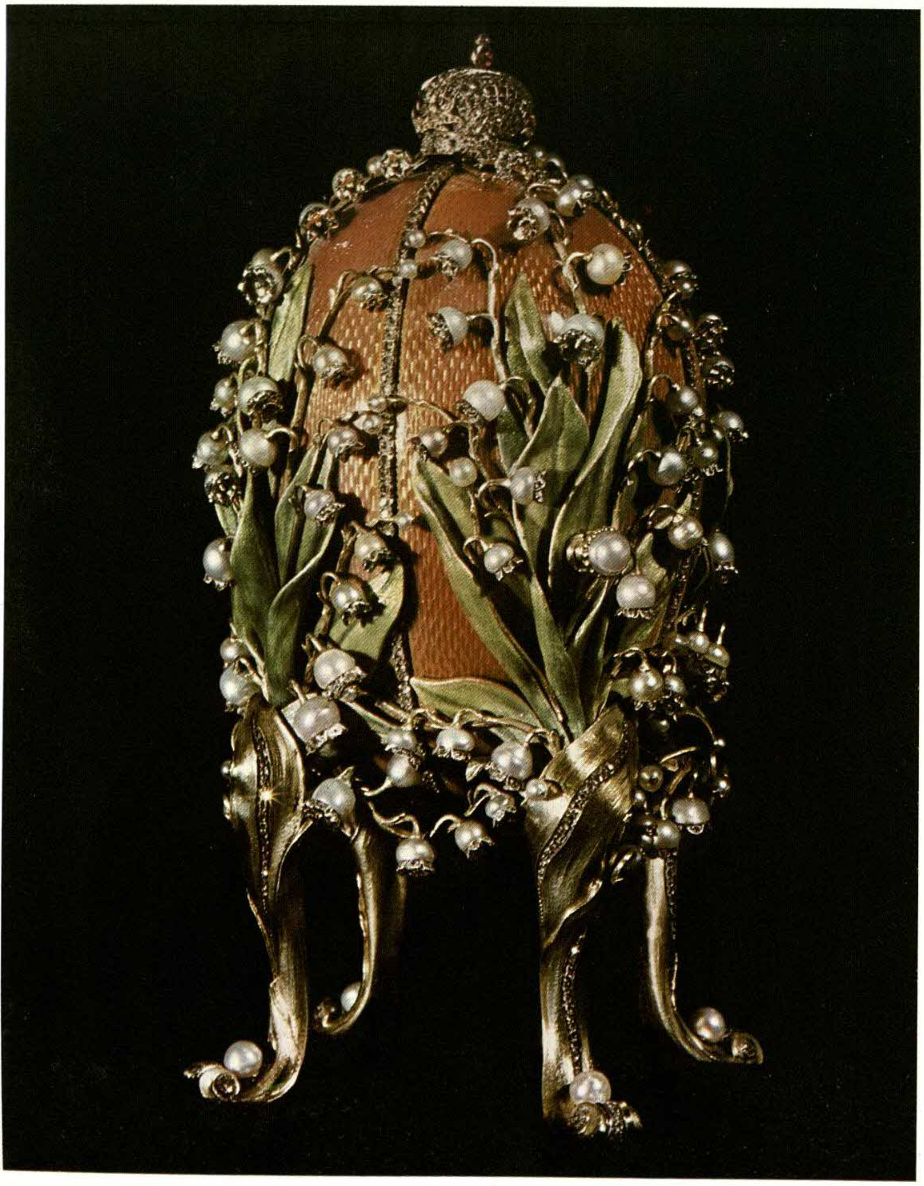
# Cutting and ornamenting eggs

Egg decorating 2

Eggs are one of the most powerful and evocative of symbols, synonymous with fertility, birth and regeneration. Many ancient religious rites were held in the spring and this may well be the occasion when eggs were first painted. They still are in central Europe with religious figures, animals or plants. This tradition, although of pagan origin, is carried on throughout the world with the giving of Easter eggs.

The high point in the history of egg decoration was reached in Russia under the inspired hand of jeweller-artist Peter Carl Fabergé. He transformed the simple egg shape, encrusting it with jewels to make a fitting present for a tsar to give his tsarina.

Egg decoration is now enjoying a revival and besides the colouring processes described in Egg decorating, chapter 1, page 218, real eggs can be trimmed with various appliqué materials and turned into delicately jewelled containers in the style created by Fabergé.

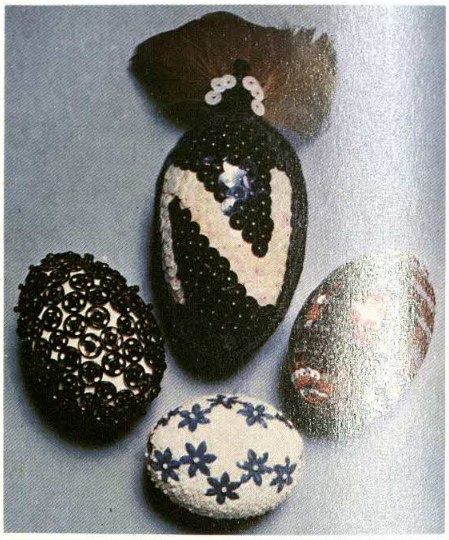

Wartski

*Priceless gems were used by Fabergé to decorate the eggs he created for the Tsar. Here he used diamonds and pearls to represent lilies-of-the-valley.*

## Applied decorations

Blown chicken eggs are the easiest to use for decoration of this kind since they are easily obtainable (for instructions on cleaning, blowing, drying and hanging eggs, see Egg decorating, chapter 1, page 218). Small fragile eggs should be hardened to avoid shattering; to do this paint on several coats of a PVA adhesive, such as Dufix, diluted with water.

**Appliqué.** Use the tiniest odds and ends, such as lace, braid or string from your work box, or cover with a miniature patchwork of fabric scraps. Add glitter with sequins and beads or make a topknot of feathers.


Peter Heinz

*For an unusual but economical gift, appliqué a chicken egg with odds and ends from your work box.*

**Collage.** Use bits of flocked foil or tissue paper coated with lacquer to finish, or brown paper which can look like leather when covered with shellac.

**Découpage.** For this technique (akin to collage) small magazine cut-outs or Victorian scrap designs are glued to the egg and then covered with several layers of lacquer.

**Pressed flowers.** Decorate eggs with little pressed flowers and leaves, keeping the scale small in proportion with the egg. Apply adhesive to the egg, never to the flowers, and finish with a spray of artists' fixative. PVA adhesive should be used with all these methods.

**Paint.** Eggs can be given a truly imperial look by covering with several coats of glossy paint. Stroke it on in one direction only and leave to dry between coats. A simple cord edging and one jewel perched on top are all that is needed for trimming.

## Cut-out eggs

Eggs can be made even more intriguing by cutting 'windows' in their shells to display a tiny figure or scene inside. Miniature doors that open and close can also be cut so that the egg contains a surprise in the Russian manner. For this you can use toys, ornaments or models, in fact anything in scale that catches your eye.

Although it is possible to cut windows in chicken eggs using sharp pointed scissors, goose eggs are preferable, especially for the more elaborate cuts. Duck eggs are inclined to warp after a time and turkey eggs are rather fragile. Unfortunately, goose eggs are only obtainable during the laying season, so it is wise to empty and cut several and put them away as stock to be used later. Emu and ostrich eggs are magnificent but expensive and hard to find unless you happen to live near a safari park. Hard-shelled eggs such as these must, however, be cut with a power tool.

It takes a lot of practice to learn to cut a perfect oval, especially if you are using chicken eggs, so an appetite for omelettes is an advantage!

## Basic cutting method

This is used for both windows and doors.

**You will need:**

Eggs and a bowl to hold their contents.

Sharp pointed scissors, razor blade or scalpel.

Small drill such as Griffin and Spalding multi-purpose tool (optional).

Transparent sticky tape, pencil.

Egg holder (use an empty egg box).

☐ Make sure the egg is absolutely clean. Dry the shell and leave the contents inside to support the egg while cutting, but have the bowl ready to catch the egg.

☐ Draw an oval on the side of the shell (fig.1a). It may help to make a pattern for this from a scrap of tissue.

☐ Cover the cutting line with transparent tape to reinforce it.

**To cut a window.** Using scissors make a hole in the centre of the area to be removed. Make sure that you only remove a small amount of shell with each cut as this will reduce chipping. Keep the scissor blades on the drawn outline when you reach it and try to make the cut as neat as possible. Remove the tape when completed. Any cracks can be covered with trimming later.

**To cut a door.** This is somewhat more difficult than cutting a window since the cut out area will be used as the door and so all mistakes made in cutting will be apparent. Use a razor blade or scalpel since this will assure a cleaner finish although it takes a little longer. As before, cover the cutting line with tape. Mark the cutting line with a groove by making repeated light strokes with the blade.

Alternatively, a small power drill, such as the battery-operated multi-purpose tool by Griffin and Spalding which can be fitted with fine cutting and drilling accessories, can be used. This is essential for working on harder shells and for more complicated cutting. Practice is needed to master the art of cutting without shattering the shell.

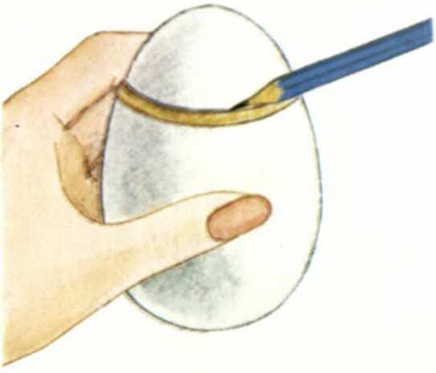
The smallest possible brass hinges about 1.25cm ($\frac{1}{2}''$) long (obtainable from DIY shops) firmly stuck with a contact adhesive such as Evo-stik Impact are used on these doors.

## Cutting variations

Goose eggs are required for the majority of these and most of them should only be attempted after considerable practice.

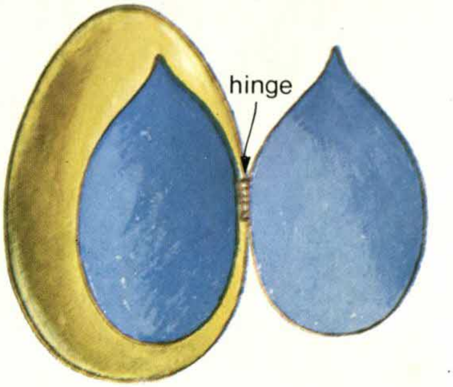
**The triptych.** In this design (fig.1b) the vertical line that forms the central opening is cut *first*, before the door. It is possible, although extremely difficult, to use a chicken egg for this particular cut.

**Top opening egg.** This simple variation involves making a lid at the top instead of in the front of the egg. Always cut at the pointed end of the shell. A rubber band can be used to form a guideline which is then marked round with a pencil (fig.2).



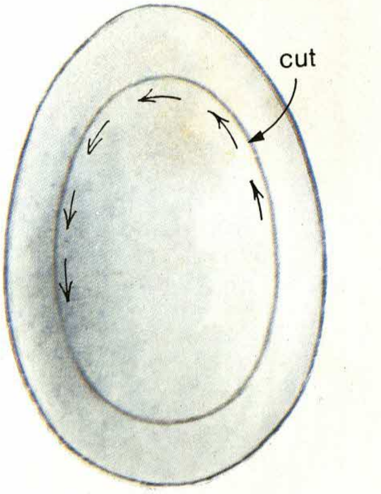
2. *Cut made at pointed end of shell.*

**Tear shape.** Draw an oval first, then shape the top into a point before cutting out, (fig.3).

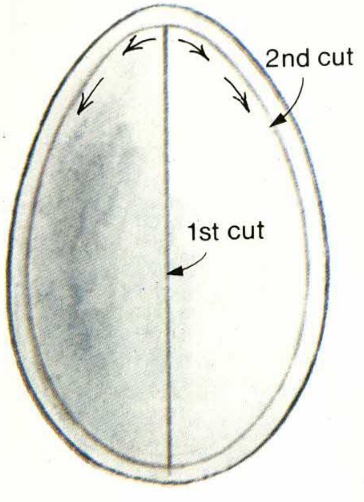


3. *Tear shape: oval with pointed top.*

**The diagonal curve** can look very effective, this comes round the upper part of the egg, rising upwards or dipping into a downwards point, (fig.4).



1a. *Pencil oval shape on side of egg.*



1b. *Triptych: cut centre line first.*

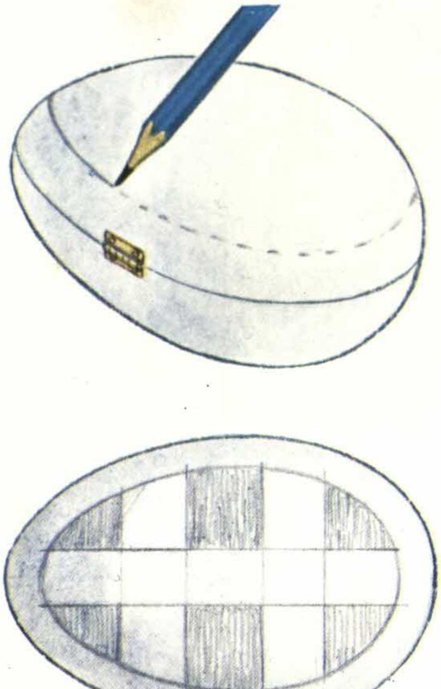
4. *A diagonal curve looks effective.*

Barbara Firth

**The scallop.** Four to six scallops can be made but more will weaken the shell. A small straight area must be left at the back for the hinge.

5. *Egg decorated with four scallops.*

**Lattice egg.** This is the most difficult of all to make. The shell is first cut in half and a hinge added. An oval shape is drawn on the lid section, this area is divided into a grid and the parts to be cut away are shaded with pencil (fig.6).

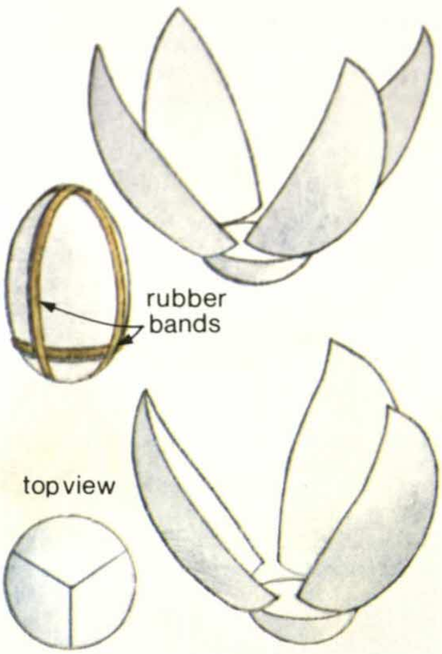


Barbara Firth

6. *The lattice: for experts only!*

**Petal cuts.** To mark the vertical divisions encircle the egg with rubber bands for a four-petalled egg or draw free-hand for a three-petalled version. Use a rubber band to mark the horizontal base line for the petals. Cut the vertical lines down from the top as far as the horizontal line, then cut along this to form the bases of the petals.

Mark petals and bases with corresponding numbers to match up when adding hinges, (fig.7).

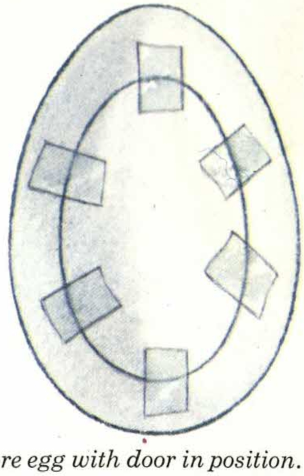


7. *Both 3 and 4 petals are possible.*

## Preparing for storage

If the cut egg is not to be immediately decorated, wash out the shell smoothing the membrane to remove air pockets. Remove the membrane if you are going to paint the interior.

Stick the door in position with scraps of sticky tape if you are planning to trim the egg at a later date, (fig.8).



8. *Store egg with door in position.*

## Ballast

Eggs that are intended to stand on a pedestal must be weighted at the base. For this you can use sand mixed with adhesive, ball bearings or lead dress weights, and cover with a tiny cardboard platform cut to fit the base of the egg. Figures inside the egg can be glued to the platform. Another idea is to fill the base of the egg with warm wax and sit figures on this. If working with chicken eggs these bases are difficult to include as they take up too much of the total area.

Make sure you do not overcrowd your egg scene as the best eggs are often the simplest.

## Hangers and pedestals

Eggs can be hung by a loop of ribbon glued lengthwise round the shell or you can stick them on a metal jewelry finding and hang from a nylon thread. Innumerable small decorative objects can be used as pedestals, from napkin rings, small lids and candle holders to pieces of driftwood. Attach the egg to the stand with contact adhesive.

Another attractive idea would be to construct an egg mobile. Suspend the eggs on varying lengths of thread or if the egg decoration is not too elaborate use coloured ribbons.

## Bethlehem egg

The interior is painted with matt blue paint and covered with silver paper stars. The outside has several coats of blue nail polish. A tiny lamb is glued to a green fabric base with scraps of gold braid as straw. The bead and sequin trimming is stuck on with contact adhesive and the egg is finished with a blue ribbon bow.

It is important to keep the scene inside the egg in proportion to the egg itself, otherwise the overall appearance can be rather clumsy.

## The imperial egg

This makes a glamorous jewelled box. Several coats of purple nail polish are used on both shell and door. The inside of the egg is trimmed with scraps of braid and sequins. Braid, pearls, sequins and beads are used to decorate the door (these are often easiest to apply if left on the strings on which they are supplied), a gap must be left where the hinge is to be positioned. An inexpensive cameo forms the centrepiece. The hinge is glued on last.

## The triptych

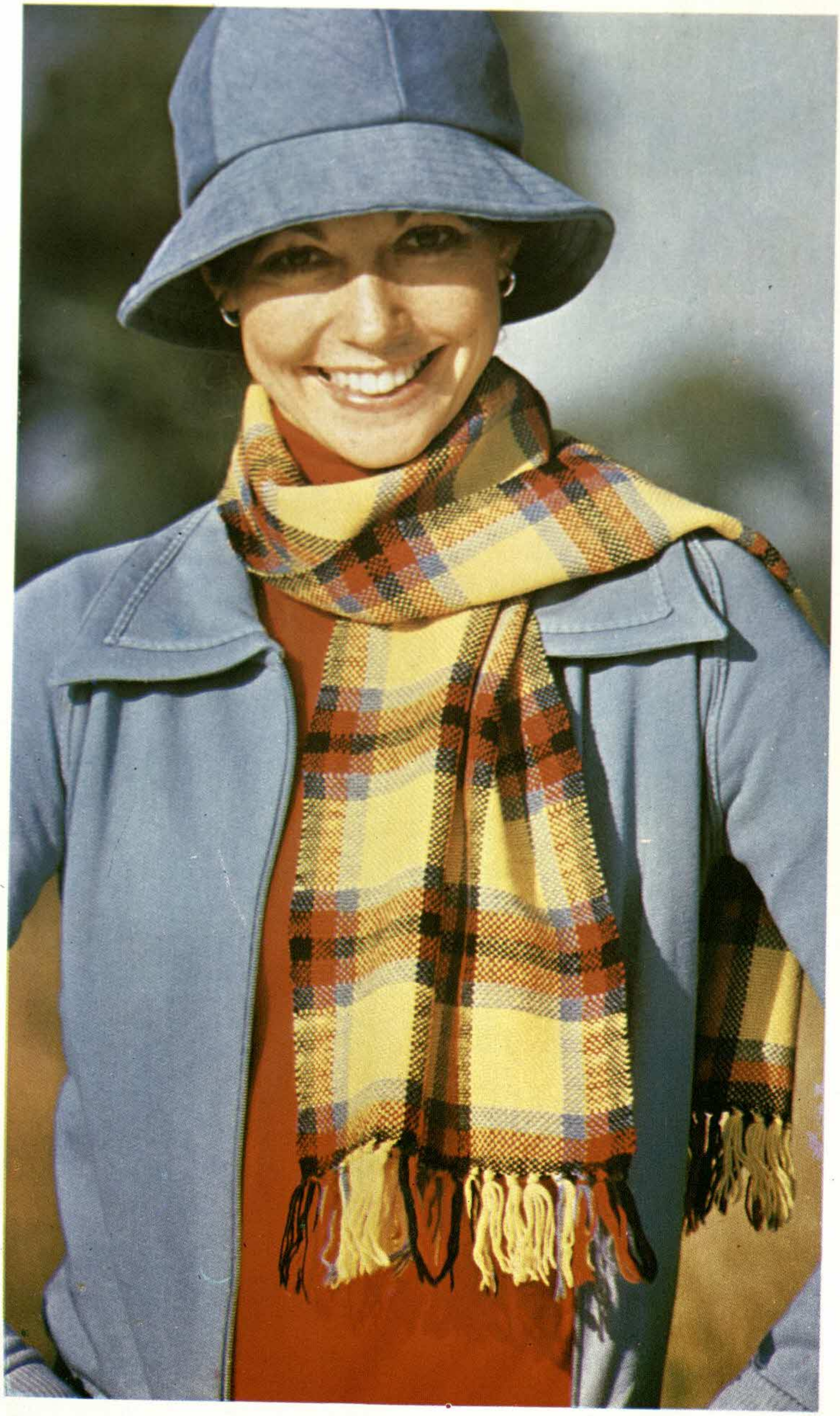
Simply decorated but difficult to cut, it is glamorous enough to hold a piece of real jewelry. The outside of the shell and the doors are painted with black enamel. The edges are then trimmed with gold braid, leaving space for the hinges. The egg is then trimmed with diamanté and coral beads and gold sequins as illustrated, with a tiny fabric cushion inside the base.

*It is hard to believe that these delicately jewelled containers by Stacey Carr started their lives as eggs. After some experience these designs could be within your scope. Braid and beads will take the place of Fabergé's real jewels.*

Geoffrey Frosh

# Fabric weaving on a roller loom

Yarn — weaving 21



Jerry Tubby

So far, the chapters on weaving have dealt with building a fabric of limited length. Tapestry, tablet weaving and inkle loom weaving all have a warp the length of which is restricted by the size of the loom.

However, the more general concept of handweaving is creating a longer fabric with a repeat design which can then be made up into anything you wish. For this you need a loom that will store a warp so that the fabric can be rolled up as you weave and more warp unrolled.

Plain weave (over one, under one) is built up by both warp and weft in equal proportion so that the pattern is a combination of colour from either direction (fig.1). Weaving lengths of cloth also differs from tapestry in that each weft pick is usually taken from edge to edge. Because of this repetitive action, a mechanical aid for making the sheds is incorporated in all looms to speed up production. Any such mechanical aid, whether a string leash on a frame loom or a wire one on a table loom, is known as a heddle. All such heddle systems are merely a sophisticated version of the leashes used in Weaving chapter 11, page 856. Whatever loom you use from a small roller loom to a large pedal loom, the basic weaving principles are the same.

## The roller loom

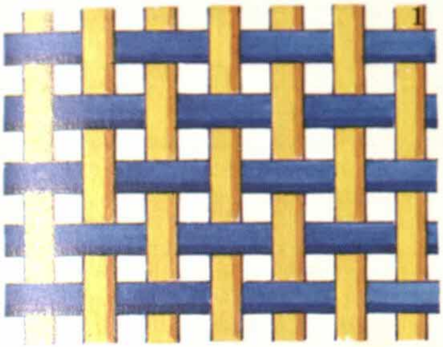
The simplest of table looms, the roller loom opposite, provides the two sheds necessary to produce plain weave. For this it uses a hole and slot rigid heddle—a strip of metal with alternate holes and slots to separate the sheds (fig.2).

There is a roller at each end of the loom which stores the warp, and a frame over which the warp is unwound. The frame helps to keep the warp threads in tension.

The rigid heddle is pushed up or down to separate the two sets of threads (figs.3 and 4) and some roller looms have a useful system of supports to help the shedding action and to leave the weaver with two free hands (see photograph right). Many variations of pattern can be achieved by using plain weave but forthcoming weaving chapters will discuss more complex weaves that need more than the two sheds. (Incidently it is not impossible to make yourself a simple loom out of a good strong wood. This could be a useful way of saving money if you hope to advance to large looms.)

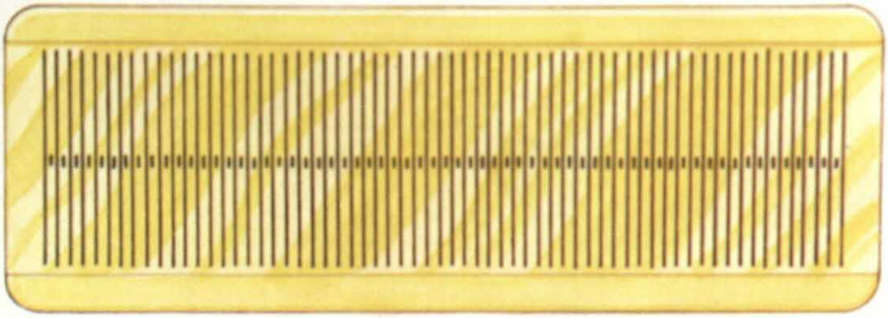
Alternatively, you can buy a ready-made roller loom if you do not want to be too ambitious at present.

*This scarf can be woven on a simple roller loom using four colours to create the plaid effect. Designed by R. Morgan.*

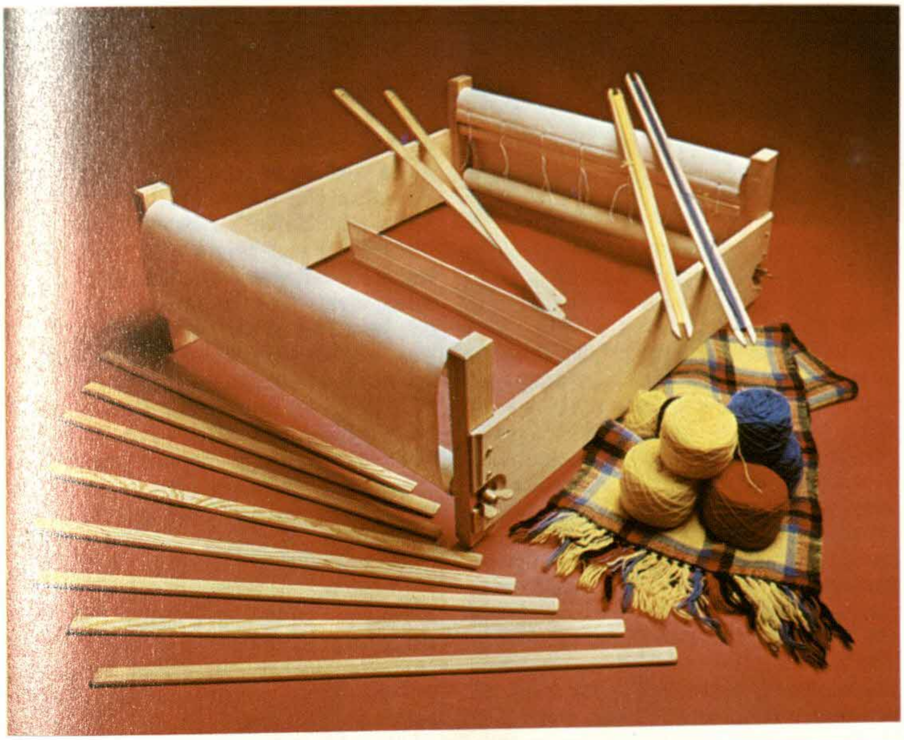


1. *The basic plain weave structure.*

2



2. *The rigid heddle has holes and slots for threads to go through.*



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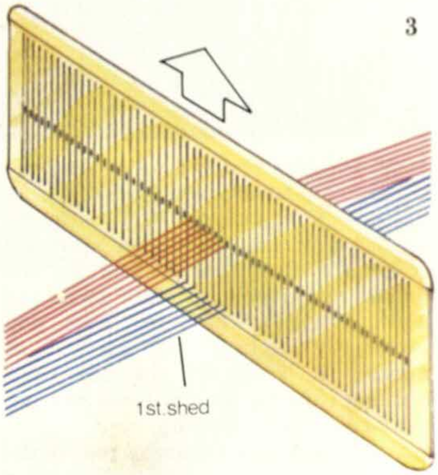
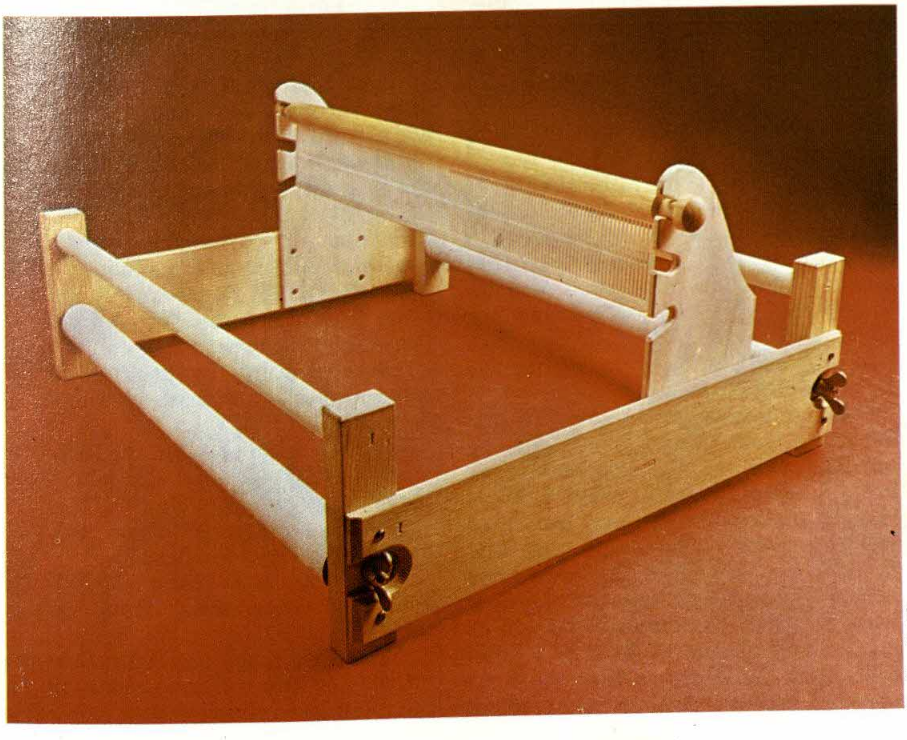


3. *When the heddle is pushed up the slot threads slide down to make shed 1.*

*Left: the roller loom is simply a horizontal wooden frame with a roller at each end for storing the warp.*



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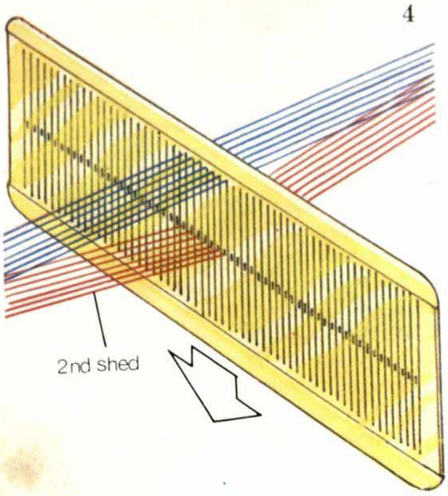
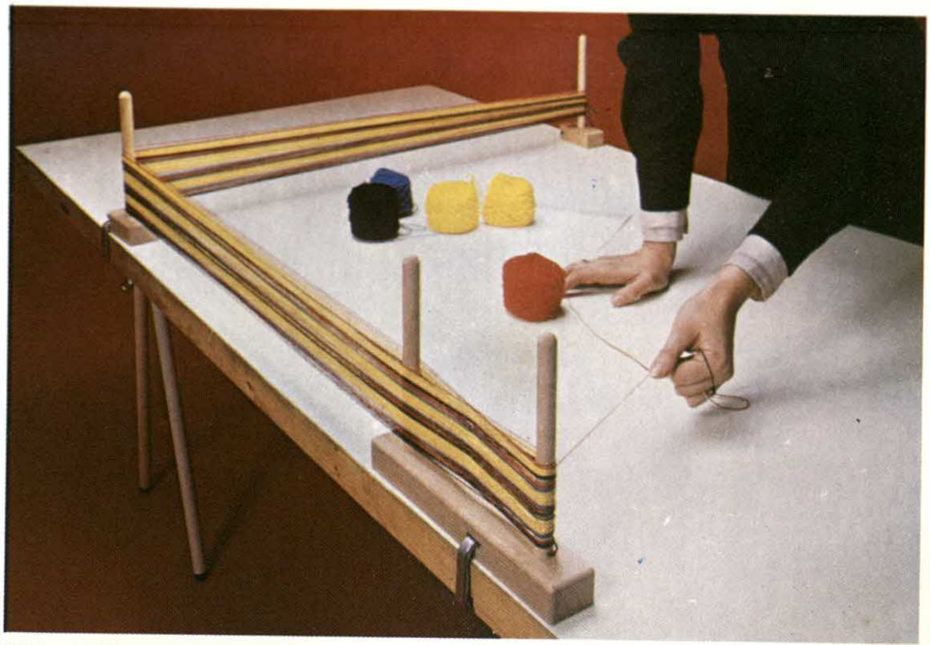


Paul Williams

4. *When the heddle is pushed down the slot threads slide up to make shed 2.*

*Left: a more sophisticated roller loom with a central support to help the weaver push the heddle up and down.*

Geoffrey Frosh



Geoffrey Frosh

*Making the warp for the scarf. The cross is between the double warping post.*

## First steps

Once you have obtained your loom, the first step is to make a warp to put on it. Warp threads travel from the warp roller (or warp beam) through the heddle and on to the cloth roller (or cloth beam). Whatever loom you eventually choose, the method of making a warp will be the same although the larger the loom you use the easier it is to warp up.

As the warp plays as much a part in the design of an object as the weft, it must be worked out before you start.

## Plaid scarf

The plaid scarf is woven in plain weave and demonstrates the possibilities of pattern making with only two sheds. It is 29cm x 125cm (11½"x 50").

**You will need:**

Roller loom with 30cm (12") rigid heddle.

Stick shuttle.

50gm (2oz) of yellow 3-ply wool.

25gm (1oz) of blue 3-ply wool.

25gm (1oz) of red 3-ply wool.

25gm (1oz) of black 3-ply wool.

Two single warping posts and one double warping post for making the warp. Alternatively you can make your own posts with 15cm (6") dowel rods and blocks of wood.

Three G-clamps.

12 sticks 15mm x 6mm (⅝"x ¼") x width of warp beam for rolling on to the cloth and warp beams. If you buy a new roller loom these sticks should be supplied with it. If you make your own sticks you will need a drill to bore holes in the ends of two of them.

Wooden raddle for separating and spreading the warp threads when putting the warp on the loom. Alternatively use a piece of wood 2.5cm x 5cm (1"x 2") x width of warp beam, box of 5cm (2"). wire nails and rubber bands for improvised raddle.

## The warp

The length of the warp must be calculated before the warp can be made. As you have to allow a certain amount of warp to go over and under the weft threads, every 90cm (36") is calculated at 100cm (40"). This is known as a weaver's metre or yard. When taken off the loom your weaving will spring back a bit and this shrinkage may be further aggravated when the fabric is washed. This means that for every 90cm (36") an extra 10cm (4") must be woven. The warp for the scarf will also require the necessary extra length for tying on to the two rollers and for the warp that cannot be woven beyond the heddle. The extra needed is usually 45cm (18"). Therefore, for a finished scarf of 125cm (50") you need a warp of 125cm (50") plus 15cm (6") to make the weaver's metre or yard, plus 45cm (18"), making a total length of 185cm (74").

**Width of warp.** The width of the scarf has now to be calculated. As 3-ply wool is being used the warp will be set at 13 ends per 2.5cm (1"). This is the usual spacing (dent) of the rigid heddle. Therefore, 29cm (11½") at 13 ends per 2.5cm (1") gives you 150 threads. You will also need an extra thread for the selvedge on each side.

The total number of warp threads is 152.

**Warping posts.** A warp is made by winding yarn to the correct length around warping posts. With a short warp such as this you can use three warping posts (two single and one double). Warping posts (fig.5) are made from dowel rods inserted into blocks of wood and they can either be bought or made. They should be fixed to a solid table with G-clamps so that the total distance between them is the length of one warp thread, ie 185cm (74") as shown in fig.6.

The yarn is wound around the posts so that two 185cm (74") warp threads are completed with each full cycle. In this way all 152 threads are made in a continuous process of winding and then transferred on to the loom.

**The cross.** In fig.6 you will see that a cross has been made round the double end pegs. This is very important and each pair of warp threads must have its cross, otherwise you will find it considerably more difficult to put the warp on to the loom.

**Warp colour.** To create the plaid pattern of the scarf, the warp threads vary in colour. Therefore, the threads must be wound between the warping posts in the correct order and the chart for the warp (fig.7) must be followed if the pattern is going to be successful.

**Winding the warp.** With the warping posts positioned as in fig.6 take the black wool and wind around as shown. Each thread from one end peg to the other is one length, back is two and so on. Looking at the warp chart (fig.7) you will see that seven black threads are needed to begin.

☐ When you have wound seven black lengths, join the black to the red wool. The knot must be at an end peg and any break in your wool must be corrected by knotting at an end peg. Never have a knot in the middle as this will appear in your weaving.

☐ After six red lengths, warp up six blue, then twenty-six yellow and continue to follow the chart until all 152 threads have been wound. Keep as even a tension as possible while winding between the posts.

☐ When you have 152 threads, tie off with a loop over whichever is the last post.

☐ Take a piece of string and drop it down through the back loop of the warp cross and then loop it under and up through the other side of the cross. Tie in a firm knot but leave a loop of string (fig.8).

**Chaining up.** To keep the warp under control, it should now be chained up.

☐ Carefully lift the warp off the peg away from the cross (peg A in fig.6). Leave it on the other pegs.

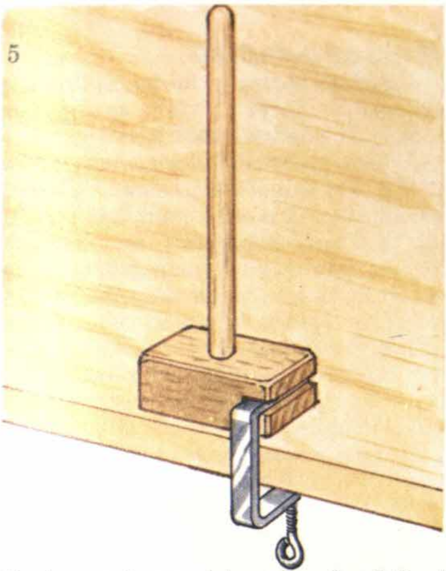
☐ Start chaining by positioning the warp across your wrist as shown in fig.9.

☐ Pull the warp through the loop over your wrist (fig.10) and slip your hand through the new loop (fig.11).

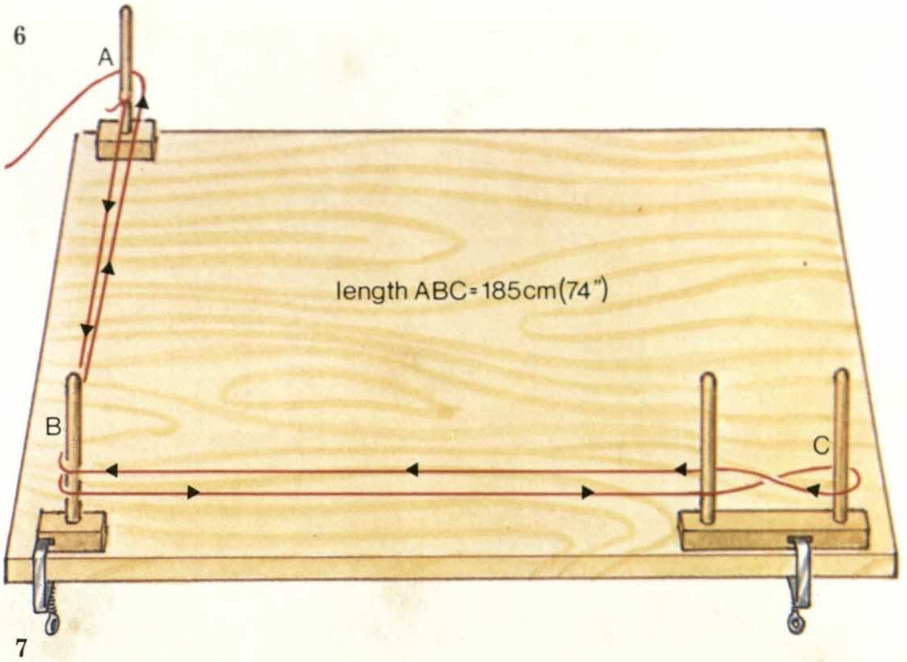
☐ Grasp the warp again to pull through the new loop (fig.12).

☐ This creates a chain (fig.13) and will stop your warp from getting tangled.

☐ When you reach peg B, lift the warp off the peg and continue chaining. Do not chain in the cross end.

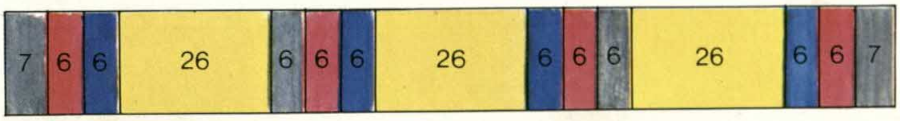


**5.** *A warping post is a dowel rod fixed to a block of wood.*



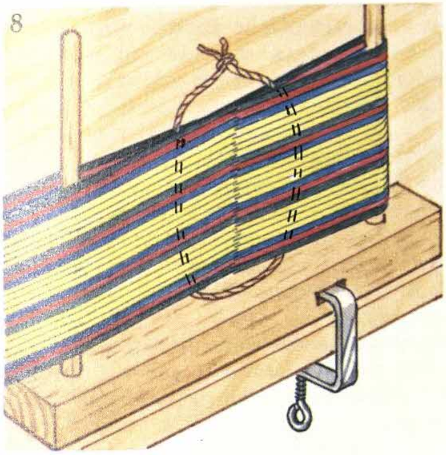
**6.** *Upper right: how to wind the warp for the scarf. The distance between pegs A and C should be 185cm (74").*

7



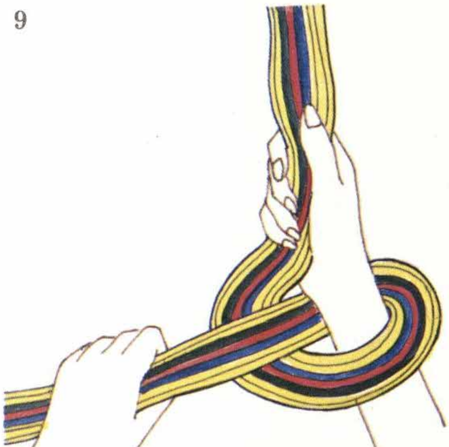
| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7 | 6 | 6 | 26 | 6 | 6 | 6 | 26 | 6 | 6 | 6 | 26 | 6 | 6 | 7 |

**7.** *Right: the chart for the warp. When joining colours knot at an end peg.*



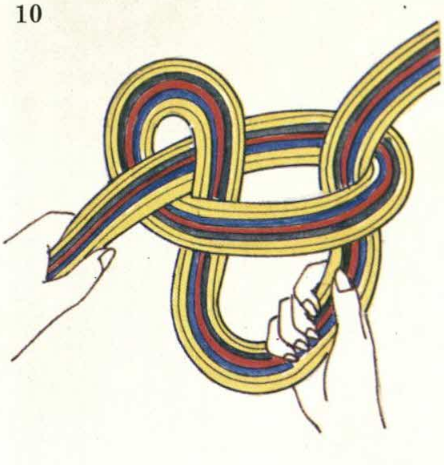
**8.** *Secure the cross with string.*

9



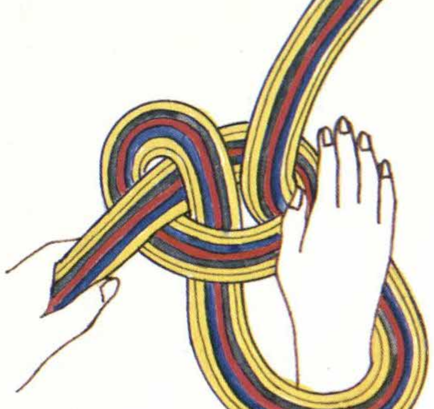
**9.** *Position for starting to chain.*

10



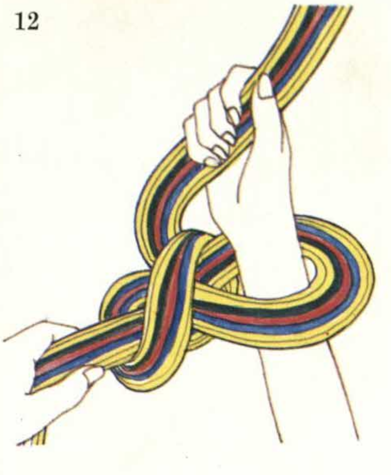
**10.** *Pull the warp through the loop.*

11



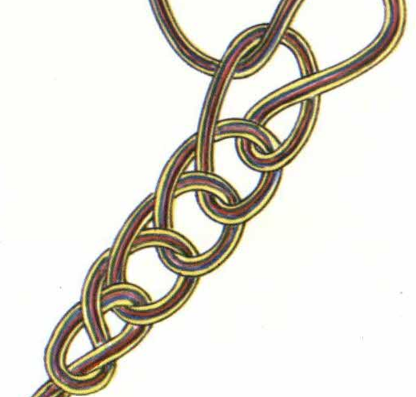
**11.** *Put your hand through the loop.*

12



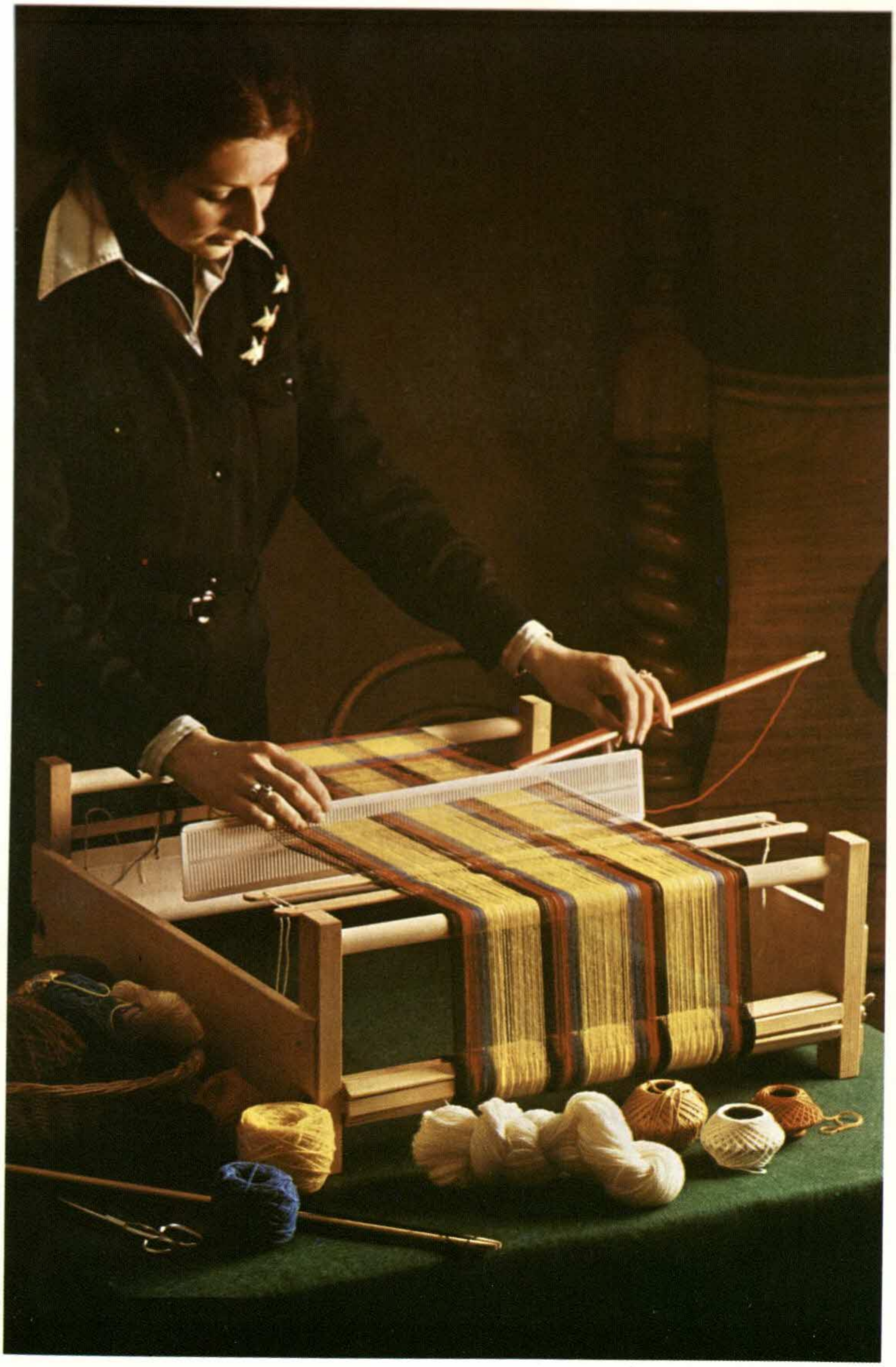
**12.** *Pull the warp through the loop.*

13



**13.** *Chaining keeps the warp orderly.*

Paul Williams



*Weaving on the roller loom. As you weave up to the rigid heddle loosen the ratchet mechanism of both rollers and wind your fabric on to the cloth beam. The unwoven warp will be fed out from the warp beam.*

Geoffrey Frosh

## Warping the loom

Getting the warp on to the loom may look a formidable task, but it can be a very absorbing one.

The warp is 13 ends per 2.5cm (1") and is now in a rope-like chain.

☐ Take hold of the cross end of the warp and insert one of the sticks in the back loop of the tied cross. Clamp the stick to the table with two G-clamps.

☐ Take two more of the sticks and bore a small hole in each end if they do not already have small holes.

☐ Insert one of the sticks in each loop of the cross (fig.14) and tie them together firmly so that there is about 5cm (2") between the sticks.

☐ Remove the string tie holding the cross as it is now secured by the two sticks called cross sticks.

☐ Shake out the warp to roughly 29cm (11½") in width and you will see that the warp threads run alternately under and over the cross sticks.

☐ The warp has now to be put into a raddle to space it over the correct width for the scarf.

## Making a raddle

The raddle spreads the warp threads across the correct width and keeps them in the correct order.

☐ Take the piece of wood 2.5cm x 5cm (1"x 2") x width of warp beam.

Knock the 5cm (2") wire nails into the wood at 1.25cm (½") intervals but leaving the nails standing 3cm (1¼") proud of the wood so that the raddle looks like a wide-toothed comb (fig.15).

**Using the raddle.** As the raddle spaces are 1.25cm (½") and the warp is 13 ends per 2.5cm (1") the raddle spaces must hold six and seven threads alternately.

☐ Take the first seven black threads plus the next red thread in correct order from the cross sticks. Place them in the first space of the raddle.

The extra thread (at each end) is for the selvedge so that the first and last space in the raddle has eight threads.

☐ The next six threads go in the next space, the following seven threads in the next space and so on until all the threads are in the raddle. Make sure that all the threads are in the right order.

☐ Place rubber bands or a continuous thread over the nails to stop the warp coming out of the raddle. The bands should form a sort of lid. (Proper wooden raddles come with a removable wooden top.)

## The warp beam

☐ Carefully remove the clamps holding the back stick to the table and take the whole of the warp to the loom.

☐ Tie the back stick firmly to the warp beam by means of strings or canvas apron ties.

☐ Holding the warp firmly and at an even tension, wind it smoothly on to the warp beam. The raddle will comb it out to the correct width and the warp will unchain itself behind the hand you are using to hold an even tension.

At this point, tension is all important and it is easier to wind the warp on if somebody helps you. One person should roll the warp on to the beam while the other holds the threads in tension combing with the fingers if any tangles appear.

To keep the warp smooth, thin sticks called warp sticks should be wound round with the warp on to the beam. Always put each circuit of sticks on top of the previous sticks (fig.16). This prevents the sticks themselves distorting the warp.

☐ When the warp is on the beam except for the last 45cm (18"), stop.

☐ Remove the remaining warp from the raddle and cut the end loops of about twenty of the threads. Tie these threads together in a loose overhand knot so that you do not lose the cross sticks and, thereby, the cross which will help you in threading the heddle.

☐ Repeat this with groups of about twenty threads all across the warp.

## Threading the heddle

☐ Tie the rigid heddle in place on the loom so that the warp ends can be threaded through the holes and slots.

☐ If you are using a 30cm (12″) heddle three spaces must be left empty on each side. If your heddle is much wider than 29cm (11½″), mark the centre space and count outwards 75 spaces to each side (count both holes and slots). This will ensure that your weaving will be centred.

☐ Untie the left-hand bunch of threads.

☐ Take the first two threads from the left of the cross sticks and thread through the first slot of the heddle. This double thread forms the selvedge.

☐ Take the next thread from the cross and thread through the adjacent hole.

☐ Repeat across the heddle untying each bunch in turn and taking the threads in order from the cross sticks—one thread in a slot, the next in a hole.

☐ Finish with the last two threads together to form the other selvedge. It is essential to take the threads in the correct order off the cross sticks.

☐ When the whole warp has been threaded, take a further thin stick and tie to the cloth beam either with cords or the ties of the canvas apron.

☐ To tie the warp to the stick that is attached to the cloth beam (cloth stick), divide the threads into bunches of twenty again. Split each bunch in half and tie the threads in an overhand knot to the cloth stick as shown (figs. 17, 18 and 19). Make sure that the bunches of threads are evenly tensioned.

☐ Untie the rigid heddle so that it is free to move up and down to make the sheds.

## Weaving the scarf

Once the warp has been put on the loom, half the fabric has been made. To create the plaid pattern, you must follow the weaving order of picks in fig.20. The colours in the warp combine with the colours in the weft to give the pattern.

☐ Wind up a stick shuttle with the black yarn.

☐ Push down on the heddle. Half of the warp ends will be separated from the others forming your first shed.

☐ Lift up the heddle so that the other set of warp ends is now above and you have your second shed.

☐ Use the heddle as a beater to push the weft into place. Do not forget that, unlike tapestry, the warp must not be completely covered and there should eventually be an even warp to weft ratio. The rules about tension still apply and you should still take your weft thread across the warp in an arching loop so that your fabric will consistently measure 29cm (11½″).

☐ After six picks of black, break off the black yarn and change to the red (see Weaving chapter 4, page 346 for general instructions on weaving).

☐ Follow the weft chart (see fig.20) until you cannot weave comfortably.

☐ Stop weaving and wind the woven fabric on to the front roller (cloth beam). The warp sticks should be wound in with the cloth as they are removed from the warp beam (see fig.16). This prevents the knots from affecting and distorting the fabric.

## Finishing off

☐ When you have completed the pattern and your scarf measures 140cm (56″), unroll the cloth beam and remove the sticks. Untie the warp from the cloth stick.

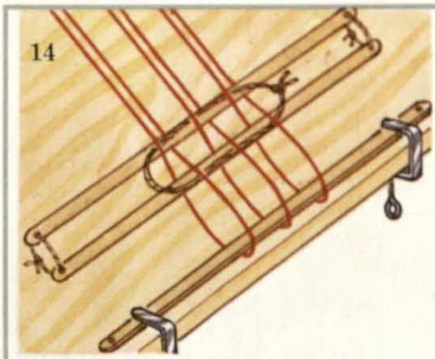
☐ Remove the warp from the warp stick (the stick attaching the warp to the warp beam) and cut the loops.

☐ Slip off the rigid heddle.

☐ Divide the warp ends into bunches of six (seven at each end) and tie them in an overhand knot (see Weaving chapter 9, page 652).

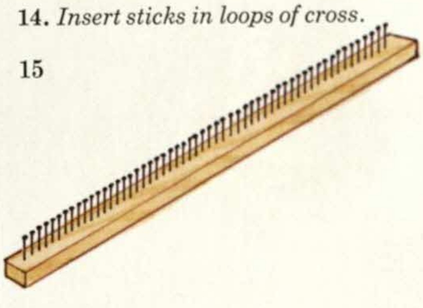
☐ Trim the fringe and darn in the weft ends.

14



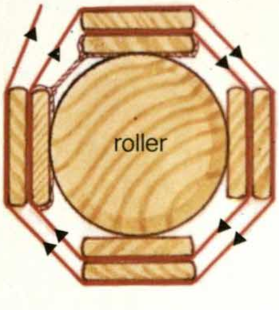
14. *Insert sticks in loops of cross.*

15



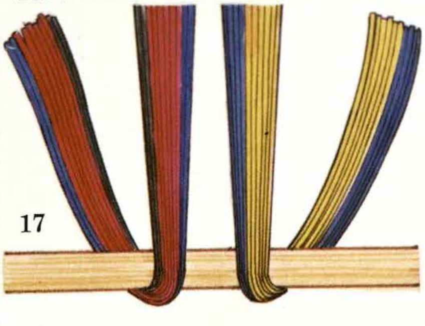
15. *Knock nails into wood for raddle.*

16



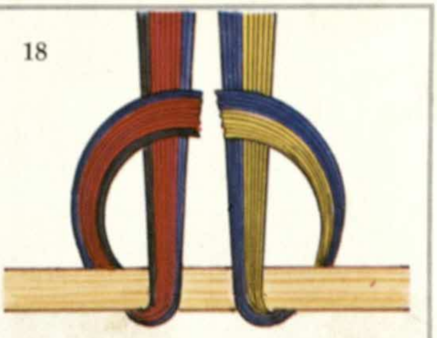
16. *Wind sticks in with the warp.*

17



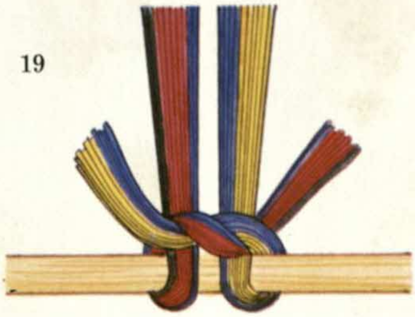
17. *Take bunches under the stick.*

18

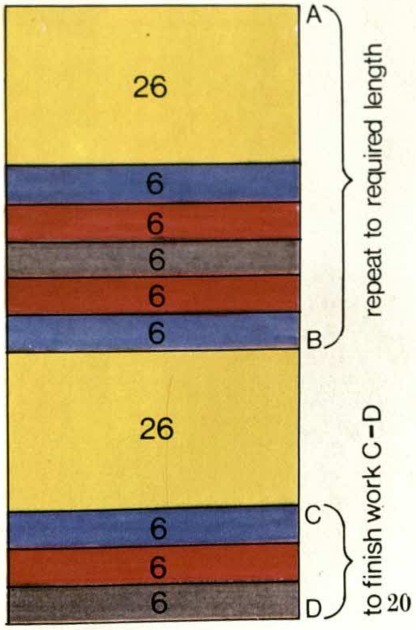


18. *Bring each bunch over the stick.*

19



19. *Tie bunches together.*



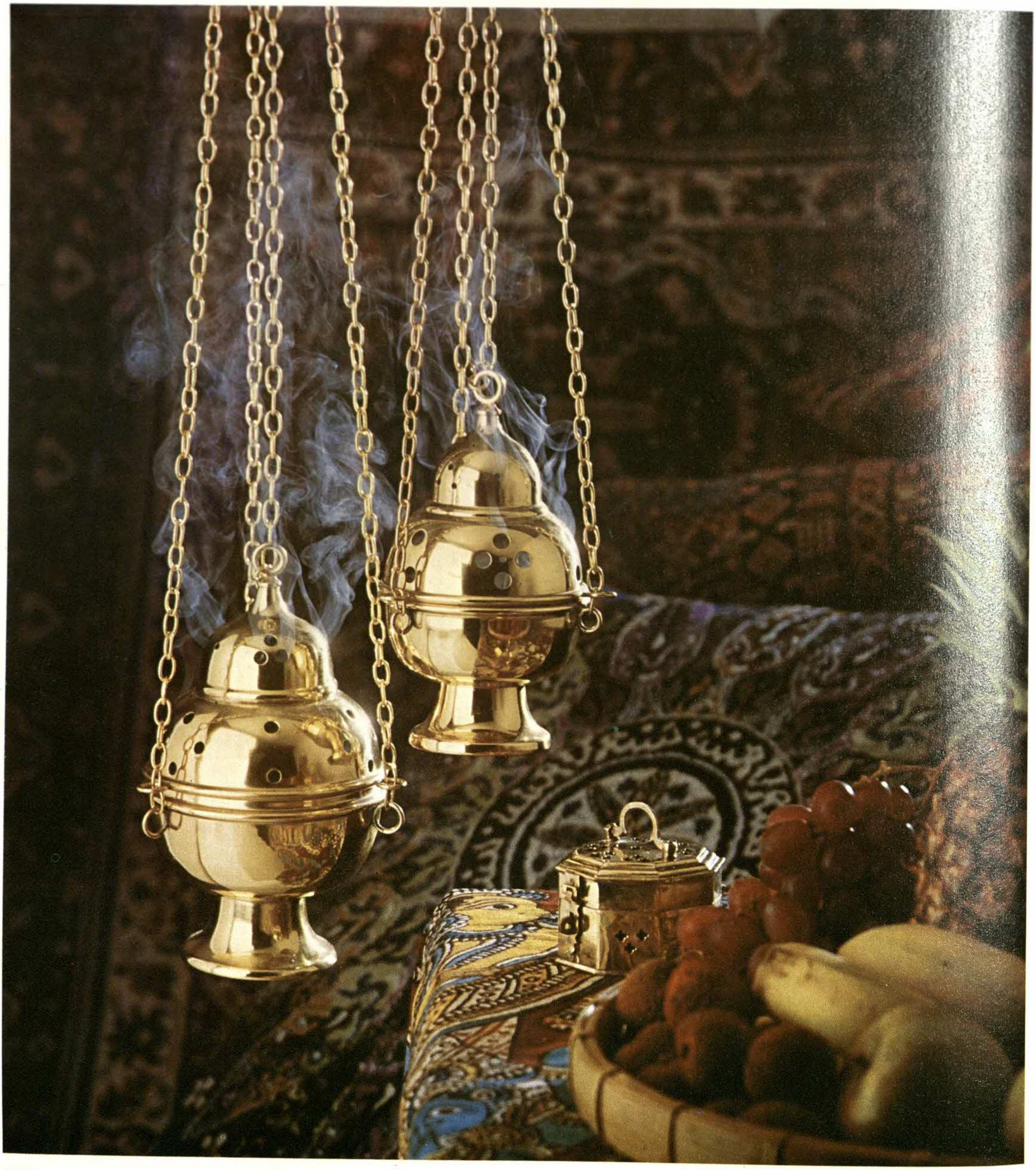
20. *Repeat pattern unit for weft.*

Paul Williams

# Sweet smells of incense

The most ancient civilizations in Egypt, Babylon and China used incense in magical and religious rites, but it wasn't generally introduced into the Christian church until about the sixth century. From then on it performed both practical and symbolic wonders—

*Church thuribles can give your home an exotic air when strung from the ceiling and used for incense burning.*



Geoffrey Frosh

keeping at bay the odours of an unwashed congregation and at the same time symbolizing zeal, virtue and the ascent of prayer to God. It was always said that in churches where incense was used there was never woodworm. Frankincense—the basis of church incense—was highly regarded for its disinfectant and purifying qualities. (One of its pagan uses had been to disguise the smell of slaughtered animals in sacrifice.)

There is no special formula for incense. Many aromatic gums, resins, spices and barks produce perfumed smoke when burned or melted on a fire. However frankincense and myrrh have Christian significance and sandalwood is a typical ingredient of oriental incense.

The ingredients of any incense must be well mixed together in powder or granular form and 2 or 3 teaspoonsful can be tossed on to charcoal already glowing hot in a censer or thurible (a form of church censer).

Incense doesn't have to be burnt in a censer however. It can be thrown on a cooking fire after outdoor meals or on an indoor fire. Or it can be mixed with charcoal and mucilage of gum tragacanth and formed into solid cones or sticks for burning in small braziers.

**Charcoal** is used in a thurible or for cones because it burns without much flame, unlike wood, giving the resins time to melt and disperse their aromas.

Charcoal needs a good draught to burn well—which is one reason why a thurible is swung to and fro in church.

Remember too that charcoal burns hotly and is a fire risk—more than one thurifer has had to put a blaze out during the church service. Always burn charcoal in airy places for the fumes are unhealthy and smoke deposits can mark furnishings in time.

You can buy suitable charcoal for incense burning from shops specializing in church requisites and church furnishers. There is a quick-lighting charcoal (chemically treated), also perfumed charcoal (to overcome the smell of burning charcoal which is not pleasant) and natural charcoal. You can use a mixture of one perfumed square to two quick-lighting or natural ones. Natural charcoal takes more patience to light but then burns well.

**Buying incense.** You can buy various grades and blends of incense, the more expensive ones having a higher percentage of fragrant gums and resins. You can add a little of these mixes to yours; or begin with an inexpensive bought incense and add interesting ingredients of your own.

**Incense and thuribles** are usually available from church furnishers, and from Indian stores you can buy incense cones, sticks and small brass braziers.

*Once dry, incense cones can be burnt in any non-flammable container. Brass containers are especially attractive.*

### Incense without charcoal

Powdered or granular incense without charcoal in it is easiest to make. You can vary the ingredients according to what is available at a reasonable price locally and add herbs, seeds and spices from your garden and kitchen cupboard. Otherwise buying the ingredients is rather costly although the ingredients will make a fairly large amount and only a drop or two from a bottle of essential oil is needed.

**Try a mixture of:**

28gm (1oz) each of sandalwood powder, gum benzoin and orris root powder.
14gm (½oz) ground cardamom seeds.
A few ground cloves.
14gm (½oz) ground cassia bark.

Gum benzoin is a useful fixative and has an enigmatic odour rather like old chests made of some scented wood; cassia chips have a cinnamon-like scent.

Powdered sandalwood is available from Indian stores and the other ingredients from grocers and herbalists.

**Alternatives.** To this mixture you can add experimental ingredients such as one or two drops of oil of cedarwood or bergamot or grated dried citrus peel, bay leaves, eucalyptus leaves and resin, dried mint or lavender, and any crushed scented barks.

For more of a church incense use a two-to-one mixture of frankincense and myrrh as the basis for your mix.

## Making shaped incense

To make a 'dough' of incense so that you can form it into shapes such as cones or sticks, you need a substance to hold the powdered ingredients together. You can use mucilage of gum tragacanth which has to be made up by a pharmacist (it has chloroform and alcohol in it) or gum arabic, or compound tragacanth powder (a sucrose, starch and tragacanth mixture), also from pharmacists.

Mucilage of, or compound tragacanth makes an easier dough to handle than gum arabic. Both form a paste with water.

**Basic mixture**—crush together:

170gm (6oz) quick-lighting charcoal.
28gm (1oz) powdered gum benzoin.
7gm (¼oz) powdered sandalwood.
7gm (¼oz) cassia.

Mix in gum tragacanth to form a stiff paste or use gum arabic or compound tragacanth powder with water.

To the basic mixture you add other incense ingredients to make it more aromatic. You need about a 50/50 mixture of charcoal and other ingredients. Too much charcoal causes warring smells—too little and it won't burn satisfactorily.

Once the mixture forms a paste, mould it into cones or other shapes.

Leave the cones on a warm dry shelf to dry out for two or three days.

## Storing

To prevent incense losing its perfume keep it in a jar. Cones, too, should be stored in a container or wrapped to retain their scent.

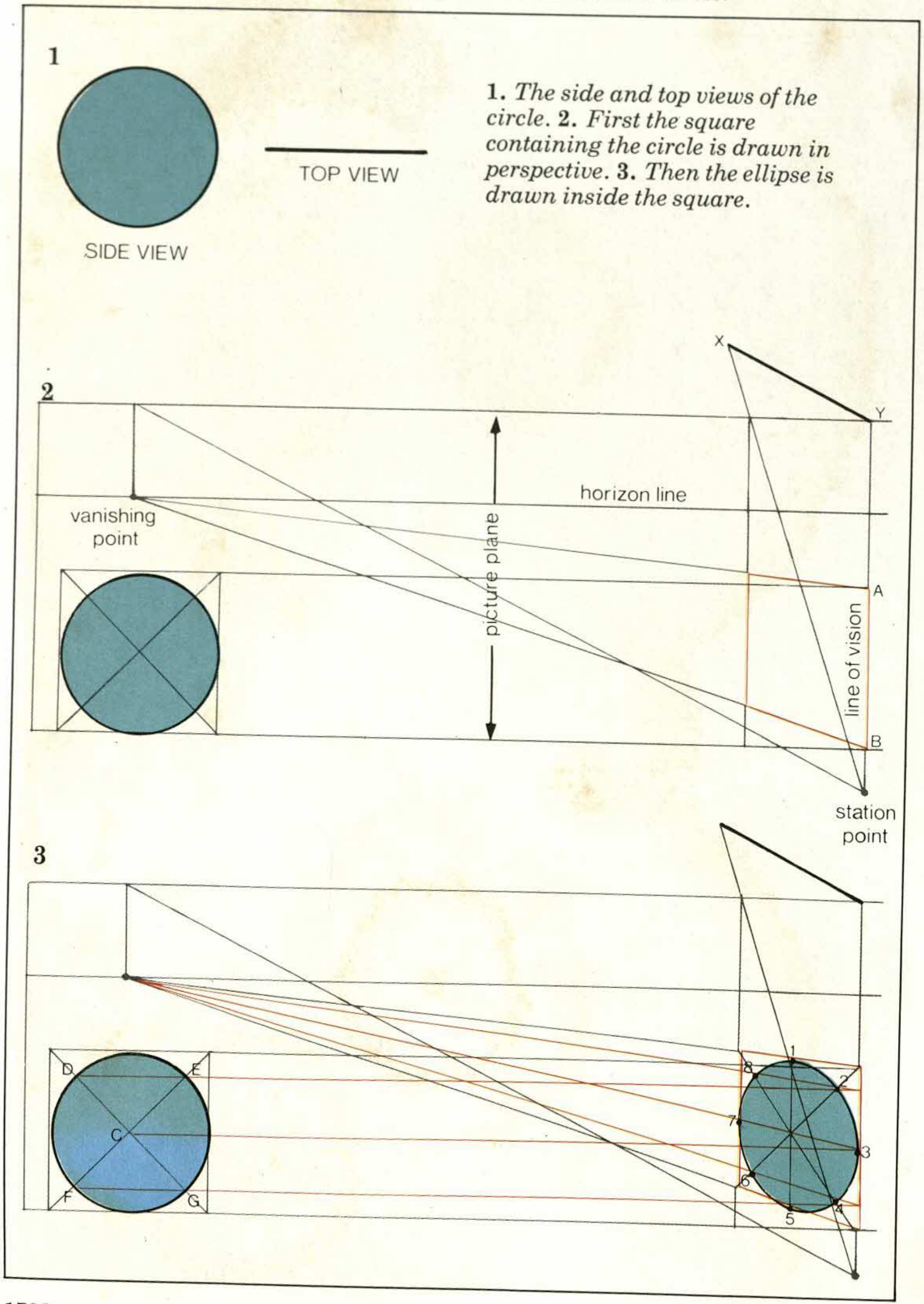
# The circle in perspective

Design know-how 64

When a circle is seen in perspective, it appears as an ellipse (oval). An ellipse can be drawn using the method of perspective drawing explained in the previous Design know-how chapter. Any circular object—a wheel or the top of a cup for example—may appear as an ellipse in a perspective drawing.

## Drawing an ellipse

This drawing is done from the top and side views of a circle (fig.1). Because the circle is two dimensional, there will really be only one view, which we will call the side view. The top view will be represented by a line equal to the diameter of the circle.



**1.** *The side and top views of the circle.* **2.** *First the square containing the circle is drawn in perspective.* **3.** *Then the ellipse is drawn inside the square.*

Paul Williams

☐ Following fig.2, draw the top view (line XY) at angle at which it is seen.
☐ Draw the line of vision from point Y towards you and mark the station point.
☐ Draw the picture plane as a frame with top and bottom sides perpendicular to the line of vision. Draw the top of the frame through Y. The bottom of the frame must be drawn far enough away from the top to accommodate adding the side view and the horizon line.

The angle of the circle's top view to the picture plane will determine the angle from which the perspective drawing is made.

☐ Draw the horizon line across the picture plane. If the horizon line is high up the picture plane, the drawing will be done from a high eye level and vice versa.
☐ To find the vanishing point draw a line from the station point, parallel to the line XY.
☐ Where this line crosses the top of the picture plane, draw a perpendicular line down to the horizon line and mark the vanishing point.

Before drawing the ellipse, it is necessary to draw a square that will contain the ellipse in perspective.

☐ Draw the side view of the circle on the bottom of the picture plane.
☐ Draw the side view inside a square with sides equal to the diameter of the circle.
☐ Draw diagonal lines across the square.
☐ Draw a line from the top of the side view to the line of vision to mark the height (point A).
☐ From points A and B draw lines to the vanishing point to mark two sides of the square.
☐ From point X on the top view, draw a line to the station point.
☐ Where this line crosses the top of the picture plane, draw a perpendicular line down to the bottom of the picture plane, and mark in the fourth side of the square.
☐ Following fig.3, draw three lines from the side view to the line of vision; one from the centre of the circle (C), and two from the points where the diagonal lines cross the circle (D-E and F-G).
☐ Where these lines cross the line of vision, draw lines to the vanishing point.
☐ Draw diagonal lines across the projected square.
☐ The centre of the square, which is also the centre of the ellipse, is at the intersection of these lines.
☐ Through the centre of the square draw a vertical line and mark points 1 to 8.
☐ Join points 1 to 8 with a smooth, curved line to complete the ellipse.

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